SANGYAHARAN SHODH

August 2000 Volume 3, Number 2

संज्ञाहरण शोध

An Official Journal of
BHARATIYA SANGYAHARAK ASSOCIATION
(Association of Anaesthetists of Indian Medicine)

Please encourage others to be new members

Bharatiya Sangyaharak Association (A.A.I.M.)

Postal Address

Operation Theatre Block, Indian Medicine, S.S. Hospital, Banaras Hindu University, Varanasi - 221 005.

Announcement

The membership of Association is available to person who are actively engaged in the field of Sangyaharan (Anaesthesia), Pain or Palliation. Membership will entitle members to attend the annual conferences and to receive the official Journal 'Sangyaharan Shodh.' Please fill in enclosed form and send it with crossed cheque o D/D in favour of A.A.I.M., Varanasi.

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Dr. D.N. Pande, Chief Editor, Section of Sangyaharan, Faculty of Ayurveda, Institut of Medical Sciences, Banaras Hindu University, Varanasi - 221 005.

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Dr. D.N. Pande ke Kit
24/11/2000 1

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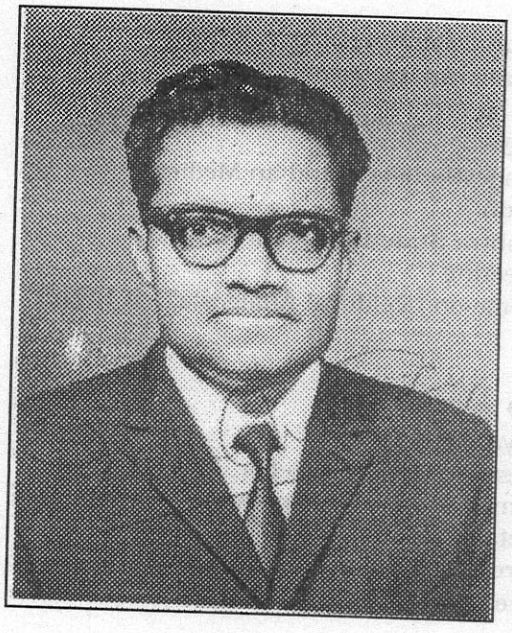


Prof. M.N. Chaudhary

(June 10, 1937 - December 19, 1999)

This issue is dedicated to late Prof. M.N. Chaudhary, First President of Association of Anaesthetists of Indian Medicine and Founder of Section of Sangyaharan, Tilak Ayurved College, Pune.

SANGYAHARAN SHODH

August 2000 **Volume 3, Number 2**

CONTENTS

Editorial

This issue will be in your hand at our 4th National conference at Udupi (Karnataka). This is an special issue on Neonatal Resuscitation. Every medical practitioner should be skilled in dealing with 'Neonatal Resuscitation.' Several neonatal deaths are only due to lack of knowledge of Neonatal Resuscitation. We the anaesthetists are more skillful to deal with Neonatal resuscitation. The present issue will only provide a standard guideline for every anaesthetists dealing with neonatal resuscitation. I am sure that everyone would like to preserve this issue. Our ultimate goal is 'to give a breath and save a life.

This issue will also cover the proceedings of IIIrd National Conference, glimpses of Sangyaharan day celebration and about our many honourable. Eminent personalities.

At last I appeal to our readers to send their article for publication in the journal and to convince other friends to be the member of our Association and Journal. I invite our all beloved members to participate actively in Udupi Conference on 25-26 November 2000.

Jai Hind

Devendra Nath Pande
Chief Editor
Senior Lecturer and Incharge
Section of Sangyaharan
Department of Shalya Shalakya
Institute of Medical Sciences
Banaras Hindu University
Varanasi

PROCEEDINGS

THIRD NATIONAL CONFERENCE OF A.A.I.M., PUNE

25TH TO 27TH DECEMBER, 1999

Third National Conference of Association of Anaesthetists of Indian Medicine (A.A.I.M.) was organized at N.I.M.A. Auditorium of Tilak Ayurved Mahavidyalaya, Rasta Peth, Pune - 11 on 25th to 27th December, 99.

The organizing Committee named the Auditorium as 'Late Dr. M.N. Chaudhary Sabhagrih' in the wake of memory of Late President of the Association Dr. M.N. Chaudhary. Auditorium was beautifully decorated for the conference purpose.

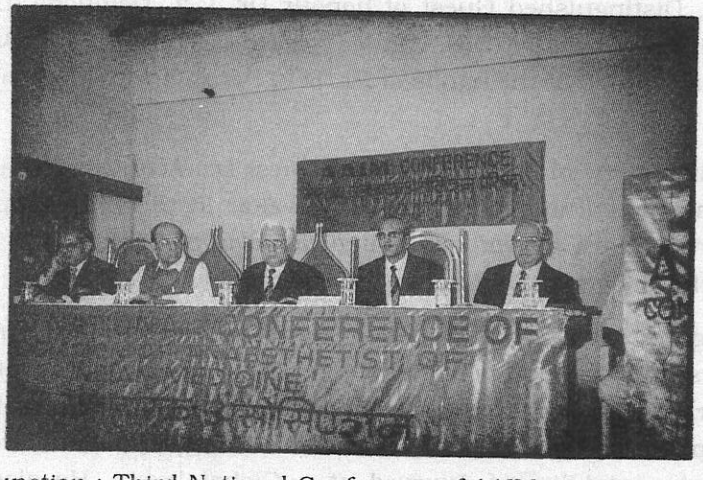
25TH DECEMBER, 1999 - FIRST DAY OF CONFERENCE

Registration & Breakfast - (9 to 10 a.m.)

At the entrance of the venue a Registration booth was opened. All the delegates were registered and were given very warm welcome by the reception committee. Delegates were served with copy of entire programme of conference along with a copy of 'Sangyaharan Shodh' and welcome 'Kit'. After having a breakfast and tea, all the delegates gathered in the auditorium and set themselves for Inaugural Function.

Inaugural Function

At the very out set of Inaugural function Chairman of organizing Committee Dr. D.P. Puranik informed the gathering about Sad demise of President of A.A.I.M. Dr. M.N. Chaudhary on 19th Dec, 99 and requested all to observe silence for two minutes to pay homage to departed soul. After doing so a regular schedule of function was resumed.



Inaugural function : Third National Conference of AAIM on 25/12/1999 at Pune (Dr. M.N. Chaudhary Auditorium). From Rt. Dr. D.N. Pande, Dr. N.J. Sonavane, Dr. Arun Nigwekar, Dr. P.H. Kulkarni, Dr. V.V. Doiphode, Dr. D.P. Puranik.

Inauguration of function by Lighting the lamp

The marvellous function began with traditional Dhanvantari Stavan. Dr. Pradnya Nagnoor and Dr. Pradnya Rege (Dalvi) recited it beautifully.

After blessings from God Dhanvantari, Chairman of Organizing Committee Dr. D.P. Puranik extended very warm Welcome to all the dignitaries on the dias and off the dias. Dr. Puranik informed in brief about the programme of the conference and assured all the delegates a very pleasant stay at Pune and appealed all to carry themselves happy memories with them after the conference.

Organising Secretary Dr. V.N. Shendye introduced Chief Guest Dr. Arun Nigavekar (Vice Chancellor-Pune University), President of function Dr. P.H. Kulkarni (President of European Ayurved Academy), Guest of Honour Dr. N.J. Sonawane (Pro-Vice-Chancellor, Pune University), Distinguished Guest of honour Dr. V.V. Doiphode (Dean of Ayurved Faculty Pune University) and Dr. D.N. Pande (Vice President A.A.I.M.). All the dignitaries on the dias were felicitated at the hands of Dr. D.P. Puranik with Memento, Shawl, and a bouquet.

After the felicitations of dignitaries Chief Guest Dr. Arun Nigavekar was requested to perform formal inauguration. Dr. Arun Nigavekar lit the Holy lamp and garlanded Lord Dhanvantari to mark a Symbolic inauguration of conference. Dr. Nigavekar also released a beautiful Souvenir 'Sammohini' ceremoniously.

In his inaugural speech, Dr. Nigavekar very much appreciated the organization of conference and stressed that such conferences give platform for young scientist to present their work and so conferences should be arranged frequently. He also stressed the need of interpathy dialogue to promote research in Ayurved at a more wide spectrum and to increase acceptability of Ayurved at a Global level. He also expressed his appreciation about the 'Souvenir' and contents in it.

Release of Souvenir : 'Sammohini' by Dr. Arun Nigavekar (VC, Pune University)

In addition to 'Souvenir' of conference, a special issue of 'Ayurvidya' Magazine, 'Sammohan Visheshank' was also prepared by Editors of Magazine. Dr. N.J. Sonawane Pro-V.C. of Pune University released this 'Special Issue' ceremoniously. On the occasion, Dr. Sonawane expressed his thoughts and admired the very concept of Special Issue of Ayurvidya Sangyaharan Issue.

Octogenerian and stalwart Anaesthetist from Indian Medicine from Pune, Dr. N.V. Bhave attracted the audience by his lively presence. Dr. N.V. Bhave was felicitated by giving shawl, shriphal, bouquet at the hands of Dean of Ayurved Faculty of Pune University, Dr. V.V. Doiphode. Dr. Doiphode extended assurance to give all sort of support to start Anaesthesia Post Graduate course in Pune University.

President of inaugural function Prof. Dr. P.H. Kulkarni at first felicitated Stalwart in Anaesthesia from Mumbai, Dr. B.S. Gharpure for his great contribution in Anaesthesiology, by giving Shawl, Shriphal, bouquet and Memento. A 'Puneri Pagadi' was also conferred as a Symbol of 'Wisdom'. Professor Dr. P.H. Kulkarni felicitated Dr. D.P. Puranik by giving away 'Ashwino Award' for his contribution in the field of Sangyaharan. On the occasion a book called 'Sangyaharan Prakash' written by Dr. D.N. Pande was also released at the hands of Prof. Kulkarni.

In presidential speech, Dr. P.H. Kulkarni informed the scholar delegates about the researches in Ayurved and growing popularity of Ayurved in foreign countries and stressed need of more research in all subjects in Ayurved so that Ayurved can be accepted at Global level. He extended his best wishes for the success of conference.

Joint Organizing Secretary Dr. Shet proposed a vote of thanks. Dr. Manish Patwardhan and Dr. Priyadarshan Joglekar with their best comparing art, made the entire inaugural function very attractive and flawless.

After a short tea break, next programme was resumed with Scientific Sessions.

Ashwinau Award 1999 – By Prof. P.H. Kulkarni to Prof. D.P. Puranik

Late Dr. B.G. Ghanekar - Oration Session

In a '**Key note lecture**' by senior Anaesthetist from Mumbai, Dr. B.S. Gharpure gave an excellent performance which was full of his various experiences from his long standing anaesthesia service. He opened few bare facts which proved to be very amusing and interesting to the audience. Naturally, Dr. B.S. Gharpure received a great applause from the fully packed house.

Dr. B.S. Gharpure was felicitated at the hands of Dr. D.P. Puranik with memento and a bouquet.

Scientific Session - I (Guest Speakers' Session)

For this first session, Dr. D.P. Puranik was in the chair and he conducted this session. Following speakers presented their lectures on various topics with the help of visual aids.

1. Prof. Dr. Vidya Mulay – Pune, **Topic** - Essential Monitoring in Anaesthesia.
2. Prof. Dr. Meera Mulay – Pune, **Topic** - Management of difficult airways in Anaesthesia.
3. Dr. G.T. Panse, **Topic** - Endorphins and Ayurved.
4. Dr. D.N. Pande – Varanasi, **Topic** - Sangyaharan - Present, Past and future.
5. Prof. Dr. J.K. Barde, **Topic** - Herbs, Useful in Anaesthesia and Analgesia.

All the speeches proved to be extremely knowledgeable and received big response from audience.

All the speakers were very keen in giving satisfactory answers to the quarries raised by delegates.

All the speakers were felicitated by giving a memento and a banquet at the hands of chairperson.

After having a delightful and delicious Lunch, delegates set ready themselves for next scientific session.

Scientific Session - II (Paper Presentations)

Prof. Dr. B.K. Bhagwat and Prof. Dr. R.N. Gangal conducted this session as a chairperson and Co-chairperson respectively. Following papers were presented in this session.

1. Dr. S.K. Singh - **Title** - An advanced approach in the post operative pain management with Ketoprofen (Rhofenid) I.V. infusion.
2. Dr. Annapurna Pai - **Title** - Scopes of cefoperazone Magnamycin) in Anaesthesia and Surgery.
3. Dr. Hari Om Singh - **Title** - Management of Diabetes Melitus and its complication under anaesthesia.
4. Dr. Neelam Gupta - **Title** - Importance of Anatomical position of 'Maram' in relation to pain.
5. Dr. Shivji - **Title** - Importance of Rakta and Sushrut's Management of haemorrhage.
6. Dr. Ganga Sagar - **Title** - A clinical trial of 'Parijat' in post operative pain.

After experts comments from the chairpersons 2nd scientific session was concluded.

Third Scientific Session started followed by Tea break for 15 minutes.

Scientific Session - III (Panel Discussion)

Dr. A.B. Limaye and Dr. S.V. Marathe conducted this session as chairperson and Co-chairperson respectively and make it very interesting for every one.

Dr. Vidya Mulay, Dr. Meera Mulay, Dr. D.N. Pande participated in this session as an 'Expert Panelists'.

Majority scholars & delegates took part in this session and made this session a very successful one.

Video Show

In this short session, films from previous conferences were shown to the gathering.

Since the Association was observing 'Mourn' due to demise of President Dr. M.N. Chaudhary a well arranged Entertainment programme was cancelled.

After having and enjoying specially prepared 'Maharashtrian recipes' at dinner delegates dispered till next day.

26TH DECEMBER, 1999 - SECOND DAY OF CONFERENCE

2nd day of conference began with added strength and enthusiasm in delegates.

Dr. P.J. Deshpande - Memorial Lecture

This lecture programme started with offering a garland to Dr. P.J. Deshpande's Photo and became really memorable by excellent master piece speech by Legend Dr. S.I. Nagral from Mumbai.

Dr. Nagral covered the topic **'Surgery in the field of Indian Medicine - Review and Reforms'**.

At the end of his lecture Dr. Nagral said that he is much honoured by having opportunity to speak in the lecture programme which is arranged in the memory of Late Dr. P.J. Deshpande.

It goes without say, Dr. S.I. Nagral's lecture received tremendous applause from audience.

Scientific Session - IV (Paper Presentations)

Dr. D.N. Pande and Dr. Akbar Ali conducted this session as a chairperson and Co-chairperson respectively. Following participants presented their Research papers in this session.

1. Dr. R.K. Jaiswal - **Title** - Concept of Vedana in Ayurved.
2. Dr. Verma - **Title** - Critical analysis of Spinal Segment.
3. Dr. Mukta Sinha - **Title** - Role of kuti sweda in the management of Sutika Paricharya.
4. Dr. R.N. Gangal - **Title** - A case presentation.
5. Dr. S.S. Bhat - **Title** - Shirodhara, Matrabasti, Nasyakarm in the Management of Trigeminal Neuralgia.
6. Dr. Neelam - **Title** - Evaluation of Ksharkarm and electric cantery in cervical erosion.
7. Dr. Nilima Amrute - **Title** - Tonsillectomy under local Analgesia - My experience.
8. Dr. Pradnya Nagnoor - **Title** - Analgesia in labour.
9. Dr. Nilamani Barve - **Title** - A case presentation.

After a short Break for Tea/Coffee, next scientific Session was resumed.

Scientific Session - V (Guest Speakers' Session)

Chairperson Prof. Dr. V.A. Dole and Co-chairperson Dr. V.N. Shendye conducted this session.

Following guest speakers presented their lectures on different topics.

1. Dr. Smt. Tendolkar - (Mumbai) - **Topic** - Anaesthesia for tubectomy and Government regulations.
2. Dr. A.B. Limaye - **Topic** - Anaesthetist and Pre-operation period.
3. Prof. Dr. R.B. Gogate - **Topic** - Non invasive and non medicinal methods of analgesia.

Out of all the lectures, Dr. Smt. Tendolkar's lecture was applauded most because of excellent presentation.

After the expert comments from Chairpersons and after proposing vote of thanks Scientific Session Programme came to an end.

Valedictory Function

All the delegates of conference, office bearers of Central Council, Office bearers of organizing Committee actively participated in this function.

Many delegates while expressing their feeling about conference said that they have gained so many things by attending conference, knowledge wise, and also hospitality from the organizers. Some of them said that they are very much impressed by nice arrangements, disciplined programmes and scientific sessions. Some delegates became very emotional while expressing their feelings. Chairman of organizing committee expressed his deep feelings for over whelming response given by delegates who came from various parts of country to attend the conference. Most Senior anaesthetists like Dr. Mali, Dr. Paranjape (Satara) were felicitated for their long standing anaesthesia service.

Prizes for the best papers were also distributed at the hands of Dr. D.P. Puranik. Recipients were -

1st Prize - Dr. Mukta Sinha, 2nd Prize - Dr. Annapurna Pai and 3rd Prize - Dr. Pradnya Nagnoor.

All the office bearers from Central Council of A.A.I.M., Chairpersons of organising Committees were also felicitated by presenting them a memento and a bouquet.

Vice-President Dr. D.N. Pande praised all the Organizing Committee for organizing a wonderful and successful conference.

At last an appeal was made to all delegates to carry with them Happy moments of the conference and it was decided to meet at next conference with large number.

After the General Body Meeting of A.A.I.M., delegates enjoyed another mouth tempting 'Maharashtrian Menu' at dinner. Before actual dispersal, all the delegates were reminded to attend the third day's programmed at Seth Tarachand Hospital which is in vicinity of the venue of conference.

27TH DECEMBER, 1999 - THIRD DAY OF CONFERENCE

Demonstrations

This proved to be absolutely special and unique feature of conference. Different demonstrations were arranged at operation theatre and Surgical ward of Seth Tarachand Ayurvedic Hospital.

Live demonstrations included - blind nasal intubation, induction with Ethyl Chloride and other. Some delegates were given chance to perform these techniques.

Other demonstrations included "Dahan Karm" Chikitsa in neuralgic origin painful conditions. Delegates actually could witness the procedures and instant results of the same.

All the delegates very much appreciated the demonstrations and showed their willingness to come to Pune for training, in future course of time.

Dr. R.B. Gogate, Dr. S.V. Marathe, Dr. V.N. Shendye, Dr. N.V. Borse conducted different demonstrations.

Though the valedictory function was arranged at the end of 2nd day, actual conclusion of the conference took place on completion of Demonstration programme on third day i.e. on 27th Dec, 99.

The glimpses of Inaugural function of conference were shown on DoorDarshan News on 27th December, 99 and on Zee T.V. on 25th December, 99.

Prominent news papers gave a good flash to conference news report.

Group Photo : Members of Bharatiya Sangyaharak Association.

Proceedings

FIRST SANGYAHARAN DAY CELEBRATION

6th February, 2000

Section of Sangyaharan, Department of Shalya Shalakya, Faculty of Ayurveda Institute of Medical Sciences, Banaras Hindu University, Varanasi.

First Sangyaharan Day Celebration was organised at 'Dhanwantari Hall' of Department of Shalya-Shalakya, Faculty of Ayurveda, Banaras Hindu University, Varanasi on 6th February 2000 at 9.00 a.m.

6th February 2000

Registration: The delegates were almost registered one day prior on 5th February 2000 but a few spot, registrations were done on requests of some local members of Association. All the delegates were served with a copy of programme with a folder sponsored by The Himalaya Drug Co. A kit with pen and pad was also served to the delegates.

Inaugural function: The function was conducted by Dr. K.K. Pandey, Vice President of the Association. The function began with Kulgeet followed by garlanding to Pt. Mahamana Madan Mohan Malviya Ji. The function was inaugurated by Prof. Y.C. Simhadri, the honourable, Vice-Chancellor Banaras Hindu University, with lighte the lamp. The Director, Prof. V.P. Singh, Prof. G.P. Dubey, Acting Dean and Dr. M. Sahu, Head of the Department joined their hands in lightening of the lamp. A warm welcome was given to the all guests by presenting garlands. Dr. M. Dwivedi, Department of Prasuti Tantra extended very warm welcome to all the dignitaries on the dais and off the dais.

Presidential speech was delivered by Dr. S.B. Pande, founder President and Patron of the Association. He appreciated the work being done by the team of section of Sangyaharan for the development of Sangyaharan.

Dr. P.K. Sharma Secretary, A.A.I.M. presented the activities of association in his address and demanded to start I.C.U. in faculty of Ayurveda.

Introductory speech was delivered by Dr. D.N. Pande, I/c Section of Sangyaharan, Faculty of Ayurveda, Sr. Vice President, A.A.I.M. In his speech, he expressed about the activities of the association and section. He demanded to create a separate Department of Sangyaharan in the Faculty.

Prof. G.P. Dubey Acting Dean also appreciated the services being done by the section of Sangyaharan.

Prof. V.P. Singh, Director, Institute of Medical Sciences, expressed his views, in his address and assured to help the section of Sangyaharan by all means. He also assured that necessary action are been taken to create Department of Sangyaharan.

Further, honorable Vice Chancellor Prof. Y.C. Simhadri honoured the guests Dr. S.B. Pande, Prof. A. Lal, Prof. P.V. Tiwari and Prof. G.C. Prasad by presenting 'Momento' for their great contribution in the field of Sangyaharan Prof. L.M. Singh was also felicitated by the Honorable Vice Chancellor in absentia. Dr. M. Sahu received the memento on behalf of Prof. Singh. The message, send by Prof. Singh was read by Dr. K.K. Pandey.

In the last, Prof. Y.C. Simhadri, Vice Chancellor, Banaras Hindu University and Chief guest of the function delivered inaugural address. In his address he assured to the members of section of Sangyaharan to do every thing for the development of Sangyaharan and to create, new department of Sangyaharan in a very short span of time.

Vote of thanks were proposed by Dr. M. Sahu, Head of the Department of Shalya-Shalakya.

Master of Ceremony Dr. K.K. Pandey announced by the permission of chair to end the inaugural function with national anthem. He invited all the guests and delegates to share the breakfast.

11.30 - 1.00 pm

On behalf of Prof. L.M. Singh, Dr. M. Sahu delivered guest lecture 'Education and Research in Shalya, Shalakya and Sangyaharan' Prof. G.C. Prasad was in the Chair. A memento was presented to Dr. M Sahu by the hands of Prof. G.C. Prasad.

After having a delightful & delicious lunch delegates set ready for the next session - **Workshop on Neonatal Resuscitation**. Workshop was conducted by Prof. B.D. Bhatia and Dr. Ashok Kumar, Dr. R.D. Sharma, Head, Department of Prasuti Tantra Chaired the session. The session was highly appreciated by the delegates and was proved to be extremely knowledgeable. The organiser of the function thanked Prof. Bhatia for presenting such a nice workshop.

Thus, the one-day celebration of Sangyaharan day ends with a great success.

D.N. Pande
Senior Lecturer and Incharge
Section of Sangyaharan
Department of Shalya Shalakya
Institute of Medical Sciences
Banaras Hindu University
Varanasi

Proceedings

WORKSHOP ON C.C.P.R.

Two workshops of 15 days each were organised under the umbrella of section of Sangyaharan, Department of Shalya-Shalakya, Institute of Medical Sciences, Banaras Hindu University, from 1-15th March 200 and 1st April to 15th April 2000. The programme was started with an inaugural function on 29th February 2000. The function was inaugurated by Prof. V.P. Singh, Director, Institute of Medical Sciences, Valedictory function was held on 15th April 2000. The director of Institute of Medical Sciences, Prof. V.P. Singh was the Chief Guest and Prof. J.K. Ojha, Dean, Faculty of Ayurveda Chaired the session. Dr. M. Sahu, Head, Department of Shalya-Shalakya, Dr. D.N. Pande I/C section of Sangyaharan and Dr. K.K. Pandey, Organisng Secretary was on the dais. The programme was conducted by Dr. P.K. Sharma, Secretary, A.A.I.M. The Director and Dean very well appreciated the programme and assured to provide financial assistance to get a 'Dummy' for this workshop.

Dr. D.N. Pande, I/C Section of Sangyaharan informed that, three workshops on C.C.P.R. will be organised every year in future also. This year only ten delegates were selected for the workshop. The participants were presented an attractive certificate by the hands of the Director, Institute of Medical Sciences, Banaras Hindu University.

Dr. M. Sahu proposed a vote of thanks to the whole team of organising committee for a successful completion of the workshop. He also thanked the guests and the participants for their keen interest in the programme.

OBITUARY

A.A.I.M. is deeply grieved on the sad demise of one of our Life Member, Dr. R.K. Ghosh, M.D.(Ay.) Sangyaharan. He was Lecturer in Govt. Ayurved College, Gauhati. May his soul rest into eternal peace.

ASSOCIATION OF ANAESTHETISTS OF INDIAN MEDICINE

Annual Report - 1998-99

1. Organised 2nd National Conference at Puri, Orrisa on 21-22 March 1998.
2. Raised membership of Association
   (a) Bonafied members - 46
   (b) Associate members - 42
3. Organised Three Clinical Meetings at Varanasi.
4. Hold Seven Executive Body Meetings and special decisions were made
   (a) Celebration of Sangyaharan Day on 6th Feb. All over the country every year.
   (b) To start Pain and Palliative care clinic in All Ayurvedic Institutions.
   (c) Proposed for Land Purchase for permanent office purpose.
   (d) Journal Registration.
5. Started Two Awards
   (a) Ashwinao Award
   (b) Late Pt. Ram Autar Pande Memorial Award
6. Successful efforts were made for creation of new posts of Lecturer Sangyaharan/M.O. Sangyaharan in Ayurvedic Colleges and Hospitals of the country.
7. Efforts for creation of Separate P.G. departments in Sangyaharan Specialty.
8. Arranged Meetings with CCIM Chairman and other members.
9. Received Donation from Mrs. Padma Deshpande of Rs. fifty thousand (Rs. 50000/- only in favour of Prof. P.J. Deshpande Memorial Oration.

Future Planning

1. To establish new Branches of the Association all over the country.
2. To start one week CME/workshop in Ayurvedic colleges on payment basis at varanasi centre.

K.K. Pandey
General Secretary, A.A.I.M

SANGYAHARAN SHODH

Annual Report – 1998-99

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3. Publications
   - Vol. I No. 1, 2
   - Vol. II No. 1, 2
   - Vol. III No. 1,
4. Tried to get order from Libraries
5. Tried to raise the problems of Ayurvedic graduates and Postgraduates by it's Editorial, Specially about Sangyaharan facility.

D.N. Pande
Chief Editor
Sangyaharan Sodh

ASSOCIATION OF ANAESTHETISTS OF INDIAN MEDICINE
MAHARASHTRA STATE BRANCH

Ref. No. 8/G/S/7/2000 Dated 24/07/2000

To,
Dr. Puranik D.P.
President, AAIM

Subject : Report of General Body Meeting of Maharashtra State Branch.

Respected Sir,

As resolved in General Body Meeting of Association of Anaesthetists of Indian Medicine on 26th of December 1999, Maharashtra State Branch come into existence. Adhoc committee was formed under President ship of Dr. Puranik. Dr. Marathe, Dr. Borse, Dr. Talwalkar, Dr. Shendye, were members of this committee. It has started its functioning. Maharashtra State Branch celebrated 6th of February 2000 as "Sangyaharan Day" with lecture programme. Dr. Talwalkar and Dr. Limaye were guest speakers. Maharashtra State Brach arranged one more lecture programme on 9th July 2000. Dr. Deepti Shintre and Dr. Talwalkar were guest lecturers.

General Body Meeting of Maharashtra State Branch was called on 9th July 2000 with one month prior notice. All state members were invited. Dr. Puranik was convener of this meeting. Meeting held in N.I.M.A. Hall at Tilak Ayurved Mahavidyalaya, Pune at 1.30 P.M. Dr. Puranik welcome all members and took review of activities of Maharashtra State Branch. Dr. Shet read a notice of meeting.

Elections for Office bearers and executive committee members were held in this meeting. Following members were declared elected for respective posts.

President	-	Dr. Marathe S.V.
Vice President	-	Dr. Talwalkar Suhas
General Secretary	-	Dr. Shendye V.N.
Treasurer	-	Dr. Borse N.V.
Joint Secretary	-	Dr. Gujarathi N.C.
Executive Members	-	Dr. Deshpande H.N.
		Dr. Varpe Anil
		Dr. Gupta R.K.
		Dr. Dehadray B.B.

Some resolutions were passed in this meeting. Copy of some resolutions are attached with this letter for your consideration and approval.

Dr. Puranik made an appeal to participate Udupi Conference actively.

New President Dr. Marathe S.V. talked about future activities of Branch, like seminars, workshops etc. in his speech.

Dr. Puranik and Dr. Borse were felicitated by Dr. Marathe. Dr. Shendye proposed a vote of thanks.

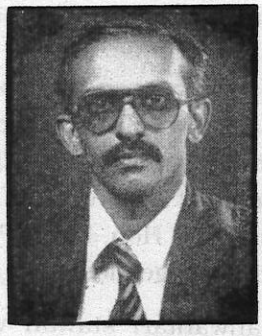
General Secretary
A.A.I.M., Maharashtra State Branch

Address for correspondence

561, Sadashiv Peth, Laxmi Road, Pune – 30, Tel. 4450314

OFFICE BEARERS – MAHARASHTRA STATE BRANCH OF A.A.I.M.

Dr. S.V. Marathe
President



Dr. V.N. Shendye
General Secretary

Dr. N.V. Borse
Treasurer

ASSOCIATION OF ANAESTHETISTS OF INDIAN MEDICINE
MAHARASHTRA STATE BRANCH

Ref. No. Dated

LECTURE PROGRAMME ON "EPIDURAL ANALGESIA" ORGANIZED BY A.A.I.M. (M.S.B.) - A REPORT

Association of Anaesthetists of Indian Medicine, Maharashtra State branch had organized a lecture programme and also get together on sun. 9th July 2000. For the lecturer and get together all the reception committee members of the third National Conference of AAIM and delegates who have done very hard work for the conference were also invited.

About fifty well known personalities were registered for this lecture cum get-together programme. On 9th July the programme started by Registration and tea at 9.30 AM.

The lecture programme was arranged in NIMA Hall of Tilak Ayurved Mahavidyalaya, Pune. The programme started at 10.30 AM. Dr. Vinod Shet, member of AAIM, Maharashtra state branch and convener extended the welcome speech. He thanked all the members for success of conference and also for the success of lecture programme which was arranged on 6th Feb. 2000 and celebrated the Day as a 'Sangyaharan Day' He told that because of hard work of all members. Our association will become strong day by day. He thanked Hon. Dr. D.P. Puranik, President of AAIM for his valuable guidance and time to time suggestions.

The Dhanwantari stawan was presented by Dr. Nilu Sulakhe and Dr. Preeti Abhayankar.

Chairperson, Hon. Dr. D.P. Puranik and Guest speaker Dr. Mrs. Shintre Deepti were invited on the dias.

Dr. Nilu Sulakhe introduced Chairperson Hon. Dr. D.P. Puranik, She narrated the devotional work done by Dr. D.P. Puranik. She requested Dr. V.V. Doiphode, Dean of Ayurved faculty. Pune to felicitate him and then requested the Chair person to give his speech on this occasion.

The Chairperson gave warm welcome to the members for the second meeting cum Lectures programme of Maharashtra State branch. He introduced the Guest speaker Dr. Mrs. D.S. Shintre and told about the work. She is doing in Anaesthesia field and her speciality about Epidural Analgesia. The Guest speaker was felicitated at the hands of Dr. Marathe.

Dr. Mrs. D.S. Shintre gave a Lectures on 'Epidural Analgesia'. The lecture lasted for about 1 hour. In her lecture she gave detail information about epidural Analgesia. She told indications, contraindications, procedure, complications, drugs used in epidural analgesia. She almost covered the whole topic and tried to tell it in simple manner.

After the lecture there was question and answer programme. It lasted for about half hour. The speaker satisfied them by giving more and more information about Epidural Analgesia.

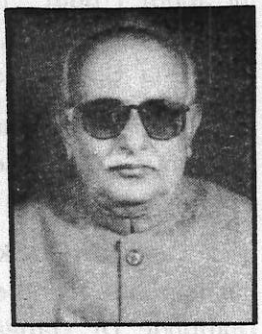
Lastly Dr. Onkar Kajale proposed the vote of thanks. He gave special thanks to participants for their maximum attendance. He also gave special thanks to Dr. Doiphode, Dr. Gangal, Dr. Borase, Dr. Londhe for their valuable presence.

The programme was followed by delicious lunch.

The participants were given the certificate of attendance for their participation.

General Secretary
A.A.I.M., Maharastra State Branch

OUR PATRON



- *Dr. S.B. Pande, founder of Sangyaharan division in India, born on July 9, 1932 at Rangoon, the Capital city of Myanmar.*
- *Came India in 1941, during IInd World War on foot in three and a half months at his native place Village Sukharipur, Bhabua (Bihar).*
- *Freedom fighter: was arrested in 1942, during Quit India movement for three months at the age of ten years and was released on the ground of minor.*
- *Primary education in Myanmar. Passed High School from Patna University (Bihar). Did I.Sc. from Central Hindu College (Kamachha), B.H.U.*
- *Admitted to ABMS course of B.H.U. During the course of medical education met the first Prime Minister of India Pt. Jawahar Lal Nehru for the upliftment of the intergrated medical education in College of Ayurveda, B.H.U.*
- *Ph.D. degree awarded on his first Sangyaharan topic thesis, in the country.*
- *Appointed House Surgeon in S.S. Hospital, B.H.U.*
- *Resident Anaesthetist, Department of Surgery, College of Medical Sciences, B.H.U. under Prof. P. Chandra D.A. (Lond.) FFARCS (Eng.), Head Div. Of Anaesthesiology and got the Golden Opportunity to work under his guidance for more than ten years.*
- *Lecturer, Faculty of Indian Medicine, B.H.U. and founded a new Section of Sangyaharan single handed and continued the struggle for starting the Post Graduate degree course in Sangyaharan.*
- *M.D. (Sangyaharan) degree course started in year 1989, under his dynamic leadership.*
- *Ph.D. degree in Sangyaharan was also started due to his continuous pains taking efforts and Dr. D.N. Pande was awarded first Ph.D. degree in Sangyaharah in year 1990.*
- *Supervised more than two dozen PG students for M.D. and Ph.D. degree in Sangyaharan.*
- *Now the PG degree in Sangyaharan is recognized in the country by the government and all private institutions.*
- *Published more than half century original research papers in Indian and foreign Journals.*
- *Visited Nepal, Srilanka, Australia and Myanmar on academic tour.*
- *Retired as Reader and Head, Div. of Sangyaharan, B.H.U.*
- *Founder President of the AAIM and was the main driving force in its foundation.*
- *Presently occupying the respectable chair of Patron of the association. We are really grateful to him.*

OUR FIRST PRESIDENT

DR. M.N. CHAUDHARY
[G.F.A.M., F.F.A.M. (Bombay)]

Late Dr. Madhukar Narayan Bhawanrao Chaudhary our First President (A.A.I.M.) S/o Shri Narayan Bhawanrao Chaudhary and Mrs. Lakshmibai Narayan Chaudhary was born on 10th June 1937. He was Professor and Head of Sammohan Shastra-Tilak Ayurved College, Pune from 1960 till death. He died on 19th December 1999.

Brothers

1. Late Prabhaker Narayan Chaudhary
2. Shri Baba Saheb Narayan Chaudhary
3. Shri Kamalaker Narayan Chaudhary
4. Shri Chandrakant Narayan Chaudhary

Residential Address

Shri Sudhir Prabhaker Chaudhary
55/1 'Madhukunj' Raj Nagar, Prem Nagar, Vibwewadi, Pune - 411 037

Last Message for Association (Sent for IIIrd National Conference, Pune)

Excerpts from the speech of Late Dr. Chaudhary

Dear Colleagues,

I am very thankful to the members of central council of A.A.I.M. for electing me the president of Association.

I had many plans and schemes for the betterment of our association. But because of varied health problems I was unable to implement these schemes.

This association has certainly a bright future and I am very confident that my successor will definitely try to implement these scheme and will achieve the success in future.

Jai Hind

Dr. M.N. Chaudhary
President, A.A.I.M.

Note : The last message was read by Dr. D.N. Pande, Vice-President at the Inaugural Function of IIIrd National Conference of AAIM at Pune on 25/12/99.

OBITUARY

A.A.I.M. is deeply grieved on the sad demise of the President of Association, Dr. M.N. Chaudhary, may his soul rest into eternal peace.

ASHWINAU AWARD - 1999

PROF. D.P. PURANIK

[B.A.M.S. (Pune University), F.F.A.M. (Anaesthesia) (M.C.I.M. - Mumbai) F.I.I.M. (I.I.M. - Pune)

Prof. Dilip Prabhakar Puranik honoured with Ashwinau Award – 1999 on 25.12.99 at Pune was born on 5th August 1946. His residential address is 107/19, Erandwana, Bharti Niwas Society, Pune - 411 004.

DESIGNATION

Academic

- Professor & Head
  Department of Shalakyatantra and Department of Shalyatantra
  Tilak Ayurved Mahavidyalaya, Pune
- Head of Department
  Department of Shalakyatantra and Department of Sangyaharan (Anaesthesia)
  Seth Tarachand Hospital, Pune

Life Member

- Rashtriya Shikshan Mandal, Pune.
- National Integrated Medical Association

Member

- Ayurved Faculty (Pune University)
- Board of studies in Shalyashalakya, University of Pune.
- Association of Sports Medicine.

Trustee

- Rashtriya Shiksan Mandal, Pune
- Ayurved Rasashala, Pune.

President

- Ex.-President, N.I.M.A., Pune District.
- Mehendale Dawakhana Samiti, Pune.
- Association of Anaesthetist of Indian Medicine - 2000-2003

Sr. Vice President

- Association of Anaesthetist of Indian Medicine - 1997-1999.

Post Graduate Guide & Teacher

- Shalyatantra
- Shalakyatantra
- Sangyaharan (Anaesthesia)

Examiner/Referee

- For M.D./Ph.D. - Shalya-Shalakya & Sangyaharan

RESEARCH WORK

Thesis

- A study of "Parasik yawani" as Pre-anaesthetic Medication for the Fellowship of M.C.I.M. (Mumbai)
- Pharmacological Screening of 'Memorin' for the Fellowship of I.I.M.

Papers

- Five papers presented in International/Conferences/Seminars.

SPECIAL AWARD

- Winner of First prize for paper presentation of 1st International Seminar on Holistic Medicine at Pune in February 1996. Title - Pharmacological Screening of 'Memorin'.

ORGANIZER

- Medical Conference/Seminars
- Latest - Convener of "International Seminar on Complementary Medicine in AIDS" at Pune in February 1998.

FIRST SANGYAHARAN DAY - 6th FEBRUARY, 2000

Inaugural Address by Vice-Chancellor, B.H.U.

Mahamana Madan Mohan Malviya Ji established Banaras Hindu University in the second decade of this century combining the best of 'Pratichi' and 'Prachi'. He had the foresight to show the path of integration of ancient Indian values with the technological development of the west. In medical education, the establishment of the Ayurvedic College by him, was an example. It was unique institution at that time where Ayurveda was to be taught incorporating allopathic. Thus, Mahamana Malviya was founder of the integrated system and this Banaras Hindu University can claim to be the birth place of integrated medicine. In continuation, Prof. K.N. Udupa established the Institute of Medical Sciences, which is unique in that it has faculties of Modern Medicine and Indian Medicine under one umbrella, with equal opportunities for both faculties, in imparting education and services to higher level. Further in the chain of integration, Prof. P.J. Deshpande established Shalya Shalakya in a new model and gave it name and fame in world. He started to explore the research methods in the field of Sangyaharan with his one of colleague Dr. S.B. Pandey, who is now known as founder of 'Section of Sangyaharan'. During the last 35 years, this section has done lot of work in this field which is now recognised nationally and internationally. The other institutions are also adopting the teaching and research methodology of this section. Being the pioneer institution this section has still to do tremendous work to lead the nation. Because this specialty is the boon of surgical units and to develop Ayurveda in total, it is necessary to develop Sangyaharan in each Ayurvedic institution. With development of Sangyaharan, many specialties will develop automatically and the skill to treat the human will enhance.

At this occasion I appeal to the present generation to give a new shape to Ayurveda which can fulfill the demand of time. I mean does not that you should forget the principles of Ayurveda. The principles and modalities of Ayurveda are original, rare, long-lived and eternal. You have to adopt only new ideas and technology to fulfill the goal of total health care.

As a part of new national awakening which demand political emancipation arise the desire for resuscitating the age old system of medicine and for adjusting it to the new conditions. The people of India desire more than ever to uplift this system and to give it a total shape of 'National Medical System' which include every branch - Medicine Surgery and Anaesthesia. It is only possible by adopting methods of modern research to interpret it in terms of scientific standards and whenever necessary import new trends into Ayurvedic system without endangering it's basic structure and pattern.

I assure you all that being the Vice-Chancellor of this university I will help and provide every facility to this specialty for adequate teaching and training.

6.2.2000

Prof. Y.C. Simhadri
Vice-Chancellor, B.H.U.

Introductory Remarks and Welcome Address

Hon'ble V.C. Prof. Y.C. Simhadri Ji, our director Prof. V.P. Singh Ji, our Dean Prof. G.P. Dubey Ji, Patron of A.A.I.M. Dr. S.B. Pande Ji, Ex-Dean Prof. P.V. Tiwari; Head of Department Prof. G.C. Prasad, Senior Teachers of the faculty and Institute, our guest, Residents, Med. Supdt., Dy. Med. Supdt., Officers, Staff members and media persons, this is my privilege to welcome you all in Dhanwantary Hall at this great occasion. Why we are celebrating 'Sangyaharan Day' ? On 16th April 1982, Board of studies of Department of Shalya-Shalakya prepared a special paper in Anaesthesia, it was passed and approved by academic council on 24 August 1983 and thus this specialty came in existence. Further on 20 Sept. 1985 Joint Board of studies proposed to start M.D. (Ay.) Sangyaharan. On 6th February 1988, Academic council approved as M.D. (Ay.) Shalya-Sangyaharan degree course by its Resolution No. 7. On 18.05.1989, an executive order was served by Prof. R.P. Rastogi, the then Vice-chancellor to start this course. Further on 3rd Feb. 1992 Academic council changed the nomenclature of degree as M.S. (Ay) Sangyaharan. This is the result of efforts of our Guru Ji Dr. S.B. Pande who was appointed as resident anaesthetist in the department of surgery on 1963 and as lecturer in 1967 in department of Shalya-Shalakya. He explore a new trend and model of research in this field, which was untouchable in Atarveda. In this large battle many person like Prof. P. Chandra, Prof. P.J. Deshpande, Prof. K. Pandey, Prof. L.M. Singh, Prof. P.V. Tiwari, Prof. G.C. Prasad and many others contributed to start this P.G. Course. And now this course is recognised by our highest body C.C.I.M. Every institution is interested to start this specialty. We all the members of A.A.I.M. express our gratefulness to all these great personalities.

During last 30 years of it's useful existence, the Sangyaharan section has grown from strength to strength and now it was realized to frame an association of such workers. This association will develop a consciousness among Ayurvedic as well as Allopathic people to develop research work in the field of Sangyaharan to explore same safe premedicant, analgesic and anaesthetics. The aim of AAIM is three fold - Sangyaharan, Pain management and palliation. This association had already organise 3 conferences since it's birth in 1996. Two orations - one in the memory of Dr. G.B. Ghanekar and the other in the memory of Prof. P.J. Deshpande is organised in every conference by the contribution of their family members. This year Association in its G.B. meeting at Pune on 26th December, 1999 decided to celebrate Sangyaharan Day on 6th February every year at it's all centres to create an awareness amongst institutions and workers to review it's activities. At present this great occasion is organised at Pune, Udupi and Varanasi. Every centre will organise workshop on this occasion and will do some social activities. We are trying to motivate the ayurvedic surgeons to use their skill in their institutions for the benefit of poor population. We are publishing a biannual

Journal to communicate our research work among the researcher of this field. The association is going to start a 15 days workshop on 'C.C.P.R.' at Pune and Varanasi.

Regarding the section of Sangyaharan in the faculty, at present it has only two consultants, one S.R. and one J.R. per year. One Reader and two more posts are vacant since nearly 3 years. Within the limited inadequate staff section is serving round the clock to the surgical units Shalya-Shalakya, Prasuti and Balroga, with its own teaching and training schedule. It also deals with the emergencies of other clinical units. Due to lack of hands section is facing a lot of problem to run the teaching, training and services. During vacations labour room services are badly affected. In this hard position, when Posts of this section should be fill up on priority, it is surprising that all the posts of Prof. and Readers of faculty are advertised, only the Reader Post of this section was not included. We are very hopeful that our able Vice-Chancellor will consider & will help this section by means of filling the vacant posts and by providing two more Sr. Resident and two J.R. to this section. Which will help not only the teaching and training of it's own students but the other-surgical units also.

At this Juncture I would like to thank Prof. Simhadri, Prof. V.P. Singh and Prof. Dubey for their contribution in restarting the B.A.M.S. course and two other Dip. courses. At the same time I would like to draw their attention regarding the inadequate staff. Nearly 50% teaching posts of the faculty as well as Hospital is vacant. There is no teacher in Shalakya and Ayurveda Samhita, Dy. MS and 5 other M.O. Posts are vacant and many technical staffs are retired. In this pitiable condition the teaching training of residents is ultimately effected. Teaching and training of medical students are totally based on hospital facility. The hospital building in nearly to come down. These all problems need your personal attention Sir. Kindly spare some time for the institute on priority to help the mankind. Especially our old building needs your personal attention, which is very sympathetic to us, according to our observation.

With these words I would like to thank you all for sparing your time to assemble here.

Jai hind

Dr. D.N. Pandey
Incharge, Section of Sangyaharan
Faculty of Ayurveda
Institute of Medical Sciences
Banaras Hindu University
Varanasi – 221 005

Speech by Secretary AAIM

Respected, Prof. Y.C. Simhadri, Vice Chancellor, B.H.U., Prof. V.P. Singh, Director, IMS, Dean Faculty of Ayurveda, Prof. A. Lal, Head, Department of Anaesthesiology, Institute of Medical Sciences, Dr. S.B. Pandey, Patron, AAIM & Founder of this section of Sangyaharan, distinguished guests, respected teachers and friends.

It is my privilege to welcome you all at Sangyaharan day celebration. Our Association born with the concept to develop Ayurveda in total by means of development of Sangyaharan (Anaesthesia). We have crossed many hurdles and obstructions in the way of our development and now we have a prosperous future and progressive present. It is the combined approach of our many learned teachers and administrators. Being the Secretary of Association, I want to draw kind attention of our Vice Chancellor regarding our problems and I firmly believe, these can easily be solved by our able Vice-Chancellor.

Sir, our section of Sangyaharan is providing round the clock routine and emergency services to the surgical units of Shalya-Shalakya Prasuti Tantra and Balroga with the inadequate staff since last 7 years with the help of only two consultants - a Sr. Resident and a Jr. Resident.

Therefore, the services are interrupted during vacations. Ultimately teaching and training of all the surgical units are badly suffering. Our one post of Reader and Medical Officer is vacant since last three years. When all the Reader's and Professor's post of the faculty were advertised, the only post of Reader of this section was not included in that. Sir, kindly advertise the rest vacant posts on priority and help us to continue our services more affectively and efficiently. Sir, I would like to request your good self to kindly recommend at least 2 more Junior Residents and Senior Residents for this Section.

I.C.U. - Sir, we have no I.C.U. facility, which is an essential part of teaching and training for any hospital. We have already sent a proposal in IXth plan. Kindly provide us grant from your R. Account to start it.

Dr. P.K. Sharma
M.D. (Ay.) Sangyaharan
M.O. State Ayurved College
SNS University
Varanasi – 221 001

Message from Prof. L.M. Singh

I am happy to note that Department of Shalya Shalakya, Faculty of Ayurveda is celebrating Sangyaharan day on 6th Feb., 2000. It is a matter of great satisfaction to me that this course M.S (Sangyaharan) was started in the faculty during the tenure of my Deanship. It was my conviction that unless this discipline was started the specialty of Shalya and Prasuti will never be self reliant and that unless we give practical exposure of operative procedures to our students their training will be deficient. To me primary objective of Ayurvedic education is to equip our students to be competent to give the best care for the patients who come under his care and Sangyaharan is an essential pre-requisite in the training of Shalya Shalakya and Prasuti, as also in the practice of these specialties.

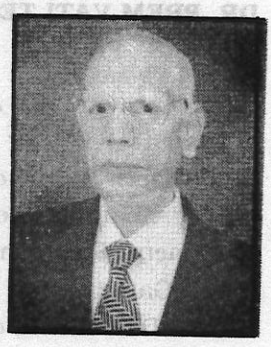
I am glad to note that CCIM has approved this specialty and has also recommended teachers of this specialty in all Ayurvedic Colleges.

I have no doubts, inclusion of this specialty in Ayurvedic education will enrich and improve its quality. To me Ayurveda should absorb and utilize the Modern advances rather than keeping it among by dogmas. Human life is precious and we the scholars of Ayurveda should not lag behind in offering what is best in our system and incorporate what is essential from the modern developments. Recently there have been many International seminars and we are talking of globalization of Ayurveda. I think there is an urgent need of standardization of Undergraduate and Postgraduate training of Ayurveda. I do hope this August University will provide a model for that, so that Ayurveda will be relevant in the next millennium. I am happy to note that students of this discipline have already made a mark in the society and I wish them all the best.

Prof. L.M. Singh
Ex-Dean, Faulty of Ayurveda
Ex-Prof. & Head
Department of Shalya Shalakya
Institute of Medical Sciences
Banaras Hindu University
Varanasi - 221 005.

BIO-DATA

DR. AKRAM LAL
(M.B.B.S, D.A., M.D. (Anaesthesia))



Born on March 1, 1939 in the village Rupapur of Varanasi district, Dr. Akram Lal had his early education in his own village and the secondary and Intermediate education in the Queen's College, Varanasi. Dr. Lal graduate in Medicine from G.S.V. Medical College, Kanpur in the year 1962 and thereafter obtained his D.A. and M.D. (Anaesthesia) from the Institute of Medical Sciences, Banaras Hindu University. He was, in the year 1966, appointed a faculty at the Banaras Hindu University in its Department of Anaesthesia, Institute of Medical Sciences, where he eventually rose to occupy the positions of reader and professor in the years 1978 and 1989 respectively and became departmental head in 1990. He is Senior most clinician of the IMS, having been service for nearly 37 years.

Dr. Akram Lal is a widely traveled person. He has been to U.K., U.S.A., Australia., West Indies where he fruitfully spent a considerable period of time in the advancement of his academic and professional skill. He was privileged to represent B.H.U. at five international conferences. In 1970, he had the honour of representing India at the Asian and Australasian Congress of Anaesthesiologists in Australia. He has worked as a consultant in hospitals of many developed countries including U.K. In recognition of his merit and services, by the Government of India in 1971, deputed him to serve in St. Vincent, West Indies for two years as consultant in anaesthesia. Dr. Lal has been immensely active with academic societies. He founded both, the Pain Society of India and Palliative Care society of India and the two societies held their maiden conferences at Banaras Hindu University. He is the ex-Presidents of the Pain Society (ISSP) and the Palliative Care Society (IAPC) of India. He was the Vice-President of the Indian Society of Anaesthetists (ISA) in the year 1982. He very successfully organized the 43rd Annual Conference of ISA at BHU in 1995. He was also the President of ISA (UP) for two consecutive years 1995 and 1996. Dr. Lal was the editor of the Indian Journal of Anaesthesia (1991-94) the journal published by Indian Society of Anaesthetists, and the President of the ISA in 1999. Presently he is the chairman Educational committee for the ISA on behalf of the world federation of the societies of Anaesthesiologists.

BIO-DATA

DR. PREM VATI TEWARI
(A.B.M.S., Ph.D.)

Born on 5th August, 1937 in Village Amour of District Kanpur (U.P.). Her parents were freedom fighters. Mother Mrs. Rama Devi Tewari-died during 1942 movement and Father Pt. Rama Shankar Tewari, Imprisoned thrice during freedom movement; Recipient of Tamra Patra awarded by Late P.M. Mrs. Indira Gandhi. She has done A.M.B.S. (Through-out meritorious) and Ph.D. Her field of specialization is Prasutitantra Striroga and Balaroga. She held various positions in her career (1) State Ay. College Lucknow : 6 yrs (House officer, R.S.O.); (2) Faculty of Ayurveda, B.H.U. : 35 yrs (Lecturer 3 yrs, Reader 10 yrs, Prof. 22 yrs); (3) Dean faculty of Ayurveda, B.H.U. (Twice) : 5 yrs; (4) Head, Department of Prasutitantra : 28 yrs; (5) Director WHO, Collaborating Centre, B.H.U. : 6 yrs. and (6) Co-ordinator, Faculty of Ayurveda and Ayurvedic Pharmaceuticals B.H.U. : 1998 to June 2000.

Memberships held

- Member Governing body NIA Jaipur, CCRAS New Delhi.
- Member SAC, PGTCR Jamnagar; NIA Jaipur, CCRAS New Delhi.
- Expert member different faculties of Ayurveda in India.
- Member selection committees of Public Service Commission; UG. & P.G. Institutions of India and Nepal.
- Education committee, C.C.I.M.

Lectures/Conferences and Seminars/Workshops

- Delivered number of extension lectures, Keynote lectures, memorial lectures at different U.G. and P.G. Institutions of India and Nepal.
- Attended/organised/chaired sessions/delivered Keynote lectures, in 60 National and 6 International conferences.

Research Projects completed 8

Theses Supervised

- D.Ay.M/M.D.(Ay) 53
- Ph.D. 16

Awards/Honours

1. Kasyapa Oration Award 1985 by NIMA
2. Kasyapa Ratna Award by Vaidya Hakim Parishad Jhansi 1987.

3. JREIM Gold Medal 1989, for best publication of book. "Ayurvediya Prasuti Tantra evam Stri Roga" Part I - PRASUTI TANTRA.
4. Sh. Shivanath Sharma Prize 1991 of Rs. 10000/= Instituted by Sh. Gyan Kalyan Trust Delhi. for best publication in Ayurveda in five years for the book "Ayurvediya Prasuti Tantra Stri Roga" Part I & II.
5. Govt. of U.P. Award of Rs. 11000/- for above book in 1991.
6. City Ratna Award by citizens of Varanasi (City Cable) 1996.
7. Gold Medal for original contributions in ayurveda by Academy of Ayurveda Vijaya wada 1997.
8. Ratna Sadasya (fellow) of Rastriya Ayurveda Vidyapitha (national Academy of Ayurveda) 1998.
9. Pandit Ram Narayan Sharma Award 2000.

Publications

(A) Research Papers 215

(B) Preface of the books/others

1. "Kaumarabhrtya" by Mishra D.N. Published by Varanaseya Sanskrita Sansthan Varanasi 1990.
2. 'Abhinava Bala Tantra' by Jain C.M. and Sharma V.P.; Chaukhambha Surabharati Prakashan Varanasi 1990.
3. Souvenir "National Seminar on Teaching, Research and Patient Care" B.H.U. 1990.
4. Proceedings of "National Seminar on Teaching Research and Patient care" Ed. by Dr. R.D. Sharma and Dr. K.P. Singh B.H.U. 1991.
5. "Child Health Care in Ayurveda" by Abhimanyu Kumar; Pub. by Sri Satguru Publications, Shakti Nagar New Delhi.
6. "Women Health Care Through Ayurveda" by Dr. M. Dwivedi. Pub. by Krishna Das Academy Varanasi; 1997.

(C) Chapters Contributed

1. "Antenatal Care in Ancient India" in "Maternal and Child Health Care" Published by Indian Council of Medical Research Project; Institute of Medical Sciences, Banaras Hindu University, 1989.
2. "Obstetric Surgery in Ayurveda" in Research and Development Published by Orient Medica Congressi Jammu 1990.
3. Two Chapters in the Book - "History of Medicine in India" Ed. by Prof. P.V. Sharma; Published by Indian National Academy, New Delhi 1992.

(D) Books

1. Edited

(i) Two Decades of Progress (Department of Prasuti Tantra) B.H.U., 1985.

(ii) "Advances in Ayurvedic Pediatrics" JREIM Publication 1986.

2. Edited and Translated

(i) Kasyapa Samhita (English translation) Chaukhambha Viswabharati Varanasi 1996.

(ii) Yogacandrika (Sixteenth century unpublished manuscript : English, Hindi translation). Chaukhambha Viswabharati Prakashan Varanasi 1998.

3. Written

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(vii) Kaumarabhrtya (Obstetrics Gynecology and pediatrics) in Ayurveda (English) Chaukhambha Viswabharati Varanasi, 1999.

(E) Miscellaneous

- Member of editorial board : Ancient Indian Surgery Series (12 books), Singhal publications, Varanasi.

BIO-DATA

Dr. G.C. PRASAD

(A.B.M.S., Ph.D., M.A.M.S., F.I.A.P., F.A.M.S., F.A.I.M.)

- Professor and Former Head Shalya-Shalakya (Surgery)
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- Institute of Medical Sciences, Banaras Hindu University
- Secretary National Academy of Indian Medicine
- President National Susruta Association
- Member New York Academe of Science U.S.A.
- Visiting Prof. Surgery University of Colombo, Sri Lanka.
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Prof. G.C. Prasad, Institute of Medical Science was Born in 1937, did his graduation from Banaras Hindu University in 1960, Prof. Prasad has served the institute initially as Senior Research Fellow under ICMR research scheme, Till 1966 he was working as Medical Officer in Sir Sunder Lal Hospital and Surgical Research Laboratory a unique research centre as incharge of the centre. Prof. Prasad was one of the two scientists in the world who received the Royal Society and Nufield Foundation, London Fellowship in 1966 to work under world renowned scientist Professor Dame Honor B. Fell, FRS at Strangeways Research Laboratory, Cambridge University, Cambridge. After returning from London he was appointed lecturer in the Department of Shalya, Institute of Medical Sciences, did his Ph.D. in the year 1970 under Prof. K.N. Udupa, Director, Institute of Medical Sciences and established Tissue Culture laboratory 1st of its kind in India. Dr. Prasad has been appointed as Reader in the same department in December 1975. Thereafter, he was promoted as Professor in March 1985 and received the chair of Head of Department in July 1985. During his academic career he has been honoured with many distinctions, besides, Prof. Prasad has worked as Head of the Department many time i.e. form 1985-1977, 1989-1991, and then 1995-1997 (July).

Educational Qualification

1. High School : U.P. Board, Allahabad, 1953
2. Pre-Medical (I.Sc.) : Banaras Hindu University, 1955
3. A.B.M.S. : Banaras Hindu University, 1955
4. Ph.D. : Banaras Hindu University 1970

Fellows of the following National & International Academic Bodies

1. M.A.M.S. : National Academy of Medical Sciences
2. F.A.M.S. : National Academy of Medical Sciences
3. F.A.I.P. : International Academy of Proctology
4. F.A.I.M. : National Academy of Indian Medicine

Experience in guiding thesis

• M.D. (Ayurveda)	33
• M.S. (Anatomy)	1
• M.S. (Orthopedics)	2
• M.S. (Neurosurgery)	2
• Ph.D. (Shalya)	9
• Ph.D. (Zoology)	4
• Ph.D. (Geography)*	1
• Ph.D. (Chemistry)*	1
• Ph.D. (Social Sciences)*	1
• Total	54

Member of Society

1. Bone and Tooth Society, London.
2. Cell Biology, United Kingdom.
3. American Association of Advancement of Societies, USA.
4. International Academy of Proctology, USA.
5. National Academy of Medical Sciences, India.
6. Society of Nuclear Medicine, India.
7. Endocrine Society of India.
8. Electron Microscopic Society, India.
9. Indian Association of Cancer Chemotherapy, India.
10. National Academy of Indian Medicine, India.
11. International Society of Ayurveda, Italy.
12. National Integrated Medical Association of India.
13. New York Academy of Science USA.

Principal Investigator of Research Scheme

1. Environmental effect on 'Thyroid gland" in Tissue Culture - I.C.M.R.
2. Pineal Thyroid relationship in tissue Culture - I.C.M.R.
3. Response of anticancer drugs to glioma cells in Tissue Culture - I.C.M.R.
4. Glutamic acid decorboxylase in cancer - U.G.C.
5. Response of Gama Amino Beutaric Acid in cancer - U.G.C.
6. Brain Biogenic Amines and Pineal gland - U.G.C.
7. Melatonine in cancer - U.G.C.
8. Use of Ayurvedic drugs in cancer - C.C.R.A.S.
9. Vit D and bone growth in Tissue Culture - Wellcome Trust, London.
10. Effect of Liv. 52 on liver in Tissue Culture - Himalaya Drug Co. Ltd.
11. Electron Microscopic studies of liver under the influence of Liv. 52-Himalaya Drug Co. Ltd.
12. Incidence of goitre in Eastern U.P. and Western U.P. - C.S.I.R.

Organization of Seminar and Symposia

- National Organised 8

Research Publications

- International Journals 44
- Indian journals 175

Publications in Books

1. Advance researches in Indian Medicine, edited by professor K.N. Udupa, G.N. Chaturvedi and S.N. Tripathi.
2. Methods in Surgical Research, edited by professor K.N. Udupa and L.M. Singh.
3. Recent Studies on Organ and Tissue Regeneration, Published from USA.
4. Sushruta's Concept of Surgery, edited by G.C. Prasad and Professor K.N. Udupa.
5. Cancer and It's Management in Ayurveda (Monograph) submitted in C.C.R.A.S., New Delhi.
6. Bone and its diseases in Ayurveda.
7. Cancer in Ayurveda (In Press) Indian Publishing House-New Delhi.

Conference Attended in India 62

Guest Speaker (Lectures) 19

Invited and Attended International Conferences 25

Studies of an Indigenous Drug 'BRAHMI' as Preanaesthetic Medication in Relation to Dehaprakriti

DASH C.K.* and PANDE D.N.**

INTRODUCTION

In day-to-day clinical life it is noticed that a number of patients behave differently, having induced and maintained with same anaesthetic agent under the uniform technique and surgical procedure. It presumes that the variable responses to the uniform technique and procedure are due to the variability of the physiological and psychological temperament of the patients.

This has been rightly mentioned in Ayurvedic Texts. The ancient physician 'Sushruta' has rightly mentioned that the different patients having different 'PRAKRITIS' behave differently to the drugs and the circumstances. He has also given emphasis that this PRAKRITI (Psychosomatic Constitution) becomes formulated during fertilization of ovum. The determination of specific 'prakriti' is assessed by the expression of preponderant DOSHAS or characters. A summation of characters in a specific human being constitutes 'Prakriti' such as Vattik, Paitik and Kaphaj. He has also mentioned that 'Prakriti' has two components such as genetic component and environmental component. The environmental component changes according to the change of environmental circumstances. (Sushruta, Sutrastan 24 Chapter, 5th Slokas).

This study has unraveled the truth of dissimilar behaviour of human beings to the same anaesthetics. For this Maharasi 'Aristotle' has rightly said that 'Modern individual treatment is better than a common system in evolution as in Medicine'

KEY WORDS

G.S. = Ghana Satwa, H.S. = Highly significant, MBP = Mean blood pressure. Diastolic pressure 1/3 of Pulse pressure.

MATERIALS AND METHODS

The forty-five numbers of healthy female patients of narrow age groups posted for D & C were randomly taken to study categorizing them into three sub groups. Such as Vattik, Paitik and Kaphaj as described by 'Sushruta' in ancient literature. All the patients were studied with Brahmi Ghana-Satwa prepared as per the description mentioned in Ayurvedic texts. All the patients were administered Brahmi G.S. : 500 mg orally along with Inj. Atropine 0.60 mg I.M. 60-90 minutes before surgery. The patients were induced and maintained with oxygen (3 lit.). Nitrous oxide (5 Lit) and halothane on

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Magill's open circuit by Goldman's vaporizer. The haemodynamic status after premedication, during and after recovery of anaesthesia desired and undesired effects during and after anaesthesia, and amount of volatile anaesthetic consumed the type of induction were studied and reported accordingly.

OBSERVATION AND RESULT

Table 1. Statistical comparison of mean age height and weight are given below.

Group	No. of Patient	Mean Age (years)	Mean Height (cms)	Mean Weight (kg)
Vattik	15	27.53 ± 3.70	151.33 ± 6.30	40.34 ± 3.84
Paitik	15	27.66 ± 4.23	150.40 ± 6.24	46.00 ± 4.14
Kaphaj	15	27.13 ± 5.06	148.66 ± 4.63	49.40 ± 3.52

On comparing the above table it is found that the Vattik group of Patients are having highest height with least body weight, Kaphaj group of patients are having highest body weight amongst the three groups. On comparing body weight Vattik Vs Kaphaj groups remains significant statistically at the value of <0.01.

Table 2. Statistical evaluation of Pulse rate and Mean blood pressure before and after premedication.

Group	Pulse Rate Before Pre-med	Pulse Rate After Pre-med	MBP Before Pre-med (mmHg)	MBP After Pre-med (mmHg)
Vattik	82.80 ± 8.20	100.13 ± 15.05	90.48 ± 7.20	95.02 ± 7.50
Paitik	78.90 ± 7.78	101.18 ± 20.10	93.95 ± 6.80	95.24 ± 9.65
Kaphaj	81.34 ± 9.34	96.00 ± 13.00	93.50 ± 5.69	96.97 ± 5.60

Table 3. Statistical Evaluation of Pulse Rate and MBP before premedication and during Intra Operative period.

Group	Pulse Rate Before Pre-med	Pulse Rate After Pre-med	MBP Before Pre-med (mmHg)	MBP After Pre-med (mmHg)
Vattik	82.80 ± 8.20	107.60 ± 11.52	90.48 ± 7.20	94.68 ± 8.92
Paitik	78.90 ± 7.78	106.60 ± 14.42	93.95 ± 6.80	90.44 ± 12.75
Kaphaj	82.34 ± 9.34	100.13 ± 12.70	93.55 ± 5.69	87.81 ± 6.11

The change of Pulse rate after premedication with Inj. atropine 0.60 mg I.M. and Brahmi G.S. 500 mg orally in Vattik, Paitik and Kaphaj are such as 82.80 ± 8.20, 100 ± 15.05, 78.90 ± 7.78, 101.18 ± 20.1, 81.34 ± 9.30, 96 ± 13. It assumes that the change

of Pulse rate after premedication is more with Vattik and Paitik groups than Kaphaj group. This change of Pulse rate is highly significant at the probability of <0.001 for Vattik and Paitik groups; but less significant is for Kaphaj patients at the probability of <0.10.

The mean change of MBP (Mean blood Pressure) for Vattik, Paitik and Kaphaj groups are such as 90.48 ± 7.26, 95.02 ± 7.54, 93.95 ± 6.80, 95.24 ± 9.65, 93.55 ± 5.69, 96.97 ± 5.69. So it is presumed that the change of mean blood pressure after premedication are insignificant with this premedicant drugs.

On comparing the change of Pulse rate and MBP amongst the three groups, such as Vattik, Paitik and Kaphaj are 82.80 ± 8.20, 107.60 ± 11.52, 78.90 ± 7.78, 106.60 ± 14.42 and 82.34 ± 9.34, 100.13 ± 12.70.

The increase of Pulse rates are found in each and every groups during operation.

Table 4. Statistical comparison of pulse rate and MBP before premedication and Intra operative period.

Group	'T' Value of Pulse Rate	Probability	'T' Value of Pulse Rate	Probability
Vattik	6.78	<0.001 (H.S.)	1.41	>0.05 (N.S.)
Paitik	6.50	<0.001 (H.S.)	0.94	>0.05 (N.S.)
Kaphaj	4.61	<0.001 (H.S.)	2.65	>0.02 (S.)

The stress due to surgical trauma increased the pulse rate in each and every group. These increase in pulse rate in all the three groups remain highly significant. The increase of pulse rates are not associated with the increase of MBP amongst the three groups. Usually cardiac output depends on to stroke volume and heart rate. Cardiac output is directly proportional to MBP so increase of pulse rate should be accompanied by increase of MBP but MBP is reduced especially in Paitik and Kaphaj groups. It is presumed from the above findings that. The venodilatation effect of halothane is greatly pronounced in Paitik and Kaphaj patients for which these groups of patients are associated with hypotension. The hypotensive effect in highly pronounced in Kaphaj patients. The drug 'Brahmi' has anti stress property and a good sedative agent. Kaphaj patients are calm and quiet in nature Halothane is also a potent volatile anaesthetic. So the drug Brahmi along with its sedative and anti-anxiety property acts synergistically in Kaphaj patients with halothane causing significant reduction of MBP.

The mean respiratory rates among the three groups during intra- operative period were significantly increased. It is much more increased in Paitik as well as in Kaphaj groups. This is because Paitik groups are having normally higher levels of circulating catecholamines (Udupa et al. 1975). So, halothane along with nitrous oxide increases the

level of circulating catecholamines and catecholamines are otherwise responsible for increasing respiratory rate. This has been proved in dog that injecting catecholamines (5-8 µg/min.) increases the respiratory rate. In Kaphaj group halothane with Brahmi G.S. reduces the respiratory drive and hence the retention of carbon dioxide and increases the respiratory rate.

Table 5. Statistical Evaluation of respiratory rate before premedication and during Intra operative period.

Group	Respiratory rate Before Pre-med (per min.)	Respiratory rate during intra operative period (per min.)	'T' Value	Probability
Vattik	20 ± 3.46	33.20 ± 7.81	6.0	<0.001 (H.S.)
Paitik	18 ± 1.35	42.26 ± 11.36	7.6	<0.001 (H.S.)
Kaphaj	20 ± 20.38	34.73 ± 7.95	6.6	<0.001 (H.S.)

The induction time among the Vattik, Paitik and Kaphaj groups in minutes are 4.33 ± 0.81, 3.80 ± 0.94, 2.86 ± 0.74. The different induction time are due to the different Psychological temperament of the patients. The drug 'Brahmi' brings about better sedation and removes anxiety and apprehension to a significant degree than any other group; though the body weight of this group is more. So halothane induces these patients quickly than any other groups. Vattik groups having least body weight becomes induced latter due to their anxiety and apprehension. So induction time in Kaphaj Vs Vattik remains highly significant.

Table 6. Statistical Evaluation of induction time and its comparison amongst the three groups.

Groups	Induction time (in min.)	Comparison		
		Groups	t-Value	Probability
Vattik	4.33 ± 0.81	Vattik Vs Paitik	1.65	>0.05 (N.S.)
Paitik	9.80 ± 0.94	Paitik Vs Kaphaj	3.05	<0.01 (H.S.)
Kaphaj	2.86 ± 0.74	Kaphaj Vs Vattik	5.21	<0.001 (H.S.)

The total anaesthetic time remains uniform among the three groups of patient. It means that due to the uniform surgical procedure the total anaesthetic time period remains identical. It presumes that the time factor is not a influencing factor for the variability of any responses before during and after surgery.

The amount of halothane consumed among the three groups in ml are 13.46 ± 2.26, 16.46 ± 1.6 and 14.06 ± 2.08. The highest amount of halothane is consumed in Paitik patients. Though the Vattik groups take more time in induction but it requires

minimal amount during maintenance phase. This may be due to least body weight in comparison to other groups. The Kaphaj patients require less amount during maintenance phase due to three psychological temperament.

Table 7. Statistical Evaluation of Total Anaesthetic time and its comparison amongst the three groups.

Groups	Total Anaesthetic time in min. (mean)	Comparison		
		Groups	t-Value	Probability
Vattik	32.86 ± 6.1	Vattik Vs Paitik	1.08	>0.05 N.S.
Paitik	30.13 ± 7.54	Paitik Vs Kaphaj	0.36	>0.05 N.S.
Kaphaj	31.06 ± 6.30	Kaphaj Vs Vattik	0.79	>0.05 N.S.

Table 8. Statistical Evaluation of Halothane Consumed and its comparison among the three groups.

Groups	Amount of halothane consumed (ml)	Comparison		
		Groups	t-Value	Probability
Vattik	13.46 ± 2.26	Vattik Vs Paitik	4.12	>0.001 (H.S.)
Paitik	16.46 ± 1.6	Paitik Vs Kaphaj	3.47	>0.01 (S.)
Kaphaj	14.06 ± 2.08	Kaphaj Vs Vattik	0.76	>0.05 (N.S.)

Table 9. Statistical Evaluation of recovery time and its comparison.

Groups	Recovery time (in min.)	Comparison		
		Groups	t-Value	Probability
Vattik	4.40 ± 1.45	Vattik Vs Paitik	2.00	>0.05
Paitik	5.40 ± 1.29	Paitik Vs Kaphaj	2.88	>0.01
Kaphaj	4.13 ± 1.12	Kaphaj Vs Vattik	0.57	>0.05

Table 10. Statistical evaluation of Pulse rate and MBP before premedication and after Recovery of the Patient.

Group	Pulse rate before Pre-med (in min)	Pulse rate after Pre-med (in mint)	MBP Before Premedication (in mmHg)	MBP after Recovery (in mmHg)
Vattik	82.80 ± 8.80	98.67 ± 17.06	90.48 ± 7.26	95.19 ± 8.70
Paitik	78.90 ± 7.78	97.33 ± 18.48	93.95 ± 6.80	92.35 ± 10.67
Kaphaj	81.34 ± 9.34	94.23 ± 10.21	93.55 ± 5.69	90.75 ± 8.37

The recovery time among the three groups in minutes are 4.40 ± 1.45, 5.40 ± 1.29 and 4.13 ± 1.12. The recovery period is more prolonged in Paitik group as this consumed a greater quantity of halothane during the surgical procedure. The recovery is fast in Kaphaj and Vattik groups as these patients consume less amount of halothane drug the procedures.

The pulse rates before premedication and after recovery among the three groups are 82.80 ± 8.20, 98.67 ± 17.06, 78.90 ± 7.78, 97.33 ± 18.48, 81.34 ± 9.34 and 94.23 ± 10.21. The change of MBP among the three groups before premedication and after recovery remains almost identical. The change of MBP are among the three groups are 90.48 ± 7.26, 95.19 ± 8.70, 93.95 ± 6.80, 92.35 ± 10.67, and 93.55 ± 5.69, 90.75 ± 8.37.

Table 11. Statistical comparison of pulse rates and MBP before premedication and after Recovery of the patients.

Group	t-value of Pulse-rate (in min.)	Probability	t-value MBP (mmHg)	Probability
Vattik	3.24	0.01 Significant	1.60	>0.05
Paitik	3.55	0.01 Significant	0.49	>0.05
Kaphaj	3.58	0.01 Significant	1.07	>0.05

On analysing the above table it is found that there is significant rise of Pulse rates during recovery period in comparison to the pulse rate before premedication. This is due to that volatile anaesthetic halothane is having weak analgesic property. The 'Brahmi' G.S. has only anti-anxiety and sedative effect. So the patients of all the groups due to surgical trauma and stress respond significant rise of Pulse rates. But the vasodilating effect of halothane persists during recovery period also. But all the patients have identical MBP in comparison to the MBP before premedication due to the lack of adequate analgesia by stimulating the sympathetic system.

Table 12. Statistical evaluation of undesired effects after recovery.

Groups	Nausea (in %)		Vomiting (in %)		Drowsiness	
	Absent	Present	Absent	Present	Absent	Present
Vattik	100	0	100	0	86.67	13.33
Paitik	100	0	100	0	60.00	40.00
Kaphaj	86.67	13.33	100	0	100	0

On comparing the undesired effects among the three groups; drowsiness is present 40% among the Paitik group. This group also consumes more halothane during intra-

operative period. Though nausea is present 13.3% on Kaphaj group of patients but it is insignificant.

CONCLUSION

- The Paitik group of patients show relatively stable haemodynamic status during surgery though they consume more amount of halothane than the other two groups.
- The Kaphaj group patients are induced and recovered quickly though their body weight is more than the other two groups.
- The apprehension dizziness, lack of sedation excitement after premedication with prolonged and uneasy induction are found in Vattik group of patients.
- This drug does not have any synergistic hypotensive effect with halothane or any other adverse effect as many other synthetic drugs usually produce during anaesthesia or during recovery period.

Experimental Evaluation of *Bryophylum Pinnatum* on Urolithiasis

M. SAHU*, SHIVJI GUPTA, L.D. BARIK***, SANJAY KUMAR*****

ABSTRACT

Urolithiasis is a common problem in the world. Various therapies have been put forward from time to time and are only capable to remove the formed stone, but hardly have any effect on prevention of recurrence. In Ayurveda Pashanbhed (*Bryophyllum pinnatum*) has been described as useful remedy for Urolithiasis (Ashmari). In this present work the effect of total extract and fresh juice of Bryophyllum pinnatum was studied in experimental urolithiasis as well as on urinary and serum electrolytes.

INTRODUCTION

Urolithiasis is a global problem and the incidence of urinary stone diseases varied according to geographical distribution. The incidence of urinary stone diseases is very high in northern India, Pakistan and northern Australia. Available effective treatment is removal of stone by means of surgery or shock wave lithotrypsy. However, these therapies are not curative treatment of urolithiasis as such treatment can only remove the formed stone but can not treat the cause of the disease. So recurrence of stone even after removal is becoming a great problem and constant efforts are being made to evolve an effective treatment as well as prevention of recurrence of disease. In Ayurveda number of drugs have been mentioned are effective against urolithiasis and *Bryophyllum pinnatum* also know as **'Pasabsheda'** is one of them. In the present study the effect of *Brophyllum pinnatum* was studied in experimental urolithiasis.

Bryophyllum pinnatum is a perennial herb, about 1 to 5 feet in height commonly found in hot and temperate zone of India. The stem is fleshy smooth and hollow, lower leaves are simple but upper are compound, thick, fleshy oval in shape, serrated margin about 3-6 inches long, flowers are cylindrical in shape about 2 inches long radish green in colour. Fruits are covered by petals. Seeds are small rectangular or oval in shape, smooth and light in weight.

PLAN OF STUDY

The present experimental study was undertaken to :

1. Produce vesical calculus by implanting zinc pallets in urinary bladder of albino rats.
2. Observe the influence of drug on formation and growth on vesical calculus.

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3. Findout the effect of this drug on serum and urinary electrolytes.
4. Observe prophylactive value of the drug on formation and growth of vesicle calculus.

MATERIAL AND METHOD

40 albino rats of either sex weighting between 250-360 gms. were taken. They were kept in animal root at a temperature between 20-25°C and were given 10-15 gms. balanced diet and adequate drinking water The albino rats were divided in to four groups.

Group A : Control group - Treated by distilled water.
Group B : Treated by 25% aq. Solution of *Bryophylum pinnatum.*
Group C : Treated by fresh juice.
Group D : Proplyactive group Treated by 25% aq. Solution of *Bryophylum pinnatum* before implantation of zinc pallet in urinary bladder.

Dose and mode of administration of drug

Fresh juice and total extract (25% aq. Solution) of *Bryophyllum pinnatum* were used separately in this study. The drug was given orally by oesophageal intubation with the help of fine feeding tube. Dose of fresh juice and total extract was 1 ml/100 gm. body weight per day.

All the animals were kept in metabolic cages, 24 hours water intake, urine out, pH of urine, urinary calcium, phosphorus and creatinine were estimated. Blood samples were collected by direct syringing from heart or thorough capillary tube by puncturing the ophthalmic artery and subjected for estimation of serum calcium, serum phosphorous, serum creatinine and serum uric acid.

In group A, B and C intravesical implantation of measured zinc pellets were done after opening the bladder to produce experimental urolithiasis where as in group D to see the prophylactive effect of this drug, total extract was given for 15 days prior to intravesical, implantation of zinc palate.

The experiment continued for two months. The growth of the stone was observed periodically with the help of X-ray, urinary output, urinary pH, Water intake were recorded and on every 15 days interval samples were send for estimation of urinary and serum electrolytes.

OBSERVATION

Observation of water intake, urine out put, urinary pH and estimation of urinary calcium, urinary phosphorus, urinary creatinine, serum calcium, serum phosphorus, serum creatinine and serum uric acid were as follows :

Water intake

Water intake observed in experimental model in ml/24 hours. The water intake gradually increased in all groups except in group A, (Table 1).

Table 1. Effect of *Bryophylum pinnatum* on 24 hours Water Intake.

Groups	Mean Initial (ml/24 hrs)	Mean (ml/24 hrs)			
		15 days	30 days	45 days	60 days
A	17.37	16.87	16.12	16.0	16.80
B	17.60	18.12	18.70	19.5	21.00
C	17.50	10.20	20.70	22.0	24.90
D	17.50	19.40	21.30	22.6	25.60

Urine out put

During the period of study the Urine output was gradually increased in group B,C, and D during and the maximum was observed in group - D i.e. 16.70 ml/day, while in control group i.e. in group - A mean initial urine output was 9.12 ml/24 hrs. and gradually decreased upto 6.36 ml/24 hrs during the period of study.

Table 2. Effect of *Bryophylum pinnatum* on 24 hours Water Intake.

Groups	Mean Initial (ml/24 hrs)	Mean (ml/24 hrs)			
		15 days	30 days	45 days	60 days
A	9.12	8.68	9.25	8.37	9.36
B	9.12	9.56	11.00	12.12	12.75
C	9.10	11.10	12.80	14.70	16.50
D	9.10	11.20	12.90	14.80	16.70

Urine pH

The mean initial pH was alkaline i.e. 10.6, 11.0, 11.1 and 11.1 in group A,B,C and D respectively. But it almost stationary in group A and become more alkaline. In other groups (B,C and D) the urinary pH gradually decreased. In group B it still remain alkaline i.e. 8.0, in group C it become neutral i.e. 7.0 and in group D it changed towards acidic side i.e. 6.8 (Table 3).

Urinary Calcium

The label of Urinary calcium was almost stationary in control group i.e. group A. But in group B, C and D labels were decreased from their mean initial value i.e. 1.40, 1.38 and 1.24 mg/24 hrs to 0.5, 0.7 and 0.6 mg/24 hrs. respectively (Table 4).

Table 3. Effect of *Bryophylum pinnatum* on 24 hours urinary pH.

Groups	Mean pH	Mean pH			
		15 days	30 days	45 days	60 days
A	10.6	10.70	10.4	10.62	18.1
B	11.0	10.60	9.2	8.60	8.0
C	11.1	10.65	10.0	8.20	7.0
D	11.1	10.70	9.9	7.50	6.8

Table 4. Effect of *Bryophylum pinnatum* on Urinary calcium.

Groups	Mean Initial (ml/24 hrs)	Mean (ml/24 hrs)			
		15 days	30 days	45 days	60 days
A	1.20	1.30	1.16	1.30	1.17
B	1.40	1.20	0.96	0.73	0.50
C	1.38	1.24	1.06	0.86	0.70
D	1.24	1.112	0.98	0.81	0.60

Urinary Phosphorus

Urinary phosphorus was also stationary in control group A while in group B, C and D it gradually deceased from 15.82, 15.80, 15.40 mg/24 hrs. to 11.60, 9.60 and 9.30 mg/24 hrs respectively within a period of 60 days (Table 5).

Table 5. Effect of *Bryophylum pinnatum* on urinary phosphorus.

Groups	Mean Initial (ml/24 hrs)	Mean (ml/24 hrs)			
		15 days	30 days	45 days	60 days
A	15.72	16.30	16.02	15.75	15.50
B	15.82	15.25	14.25	13.37	11.60
C	15.80	13.40	11.90	10.80	9.60
D	15.40	13.40	12.10	10.40	9.30

Urinary creatinine

Like urinary calcium and phosphorus no change was observed in urinary creatinine level in control group. Whereas in group B, C and D the level was gradually decreased from 19.80, 19.74 and 19.92 mg/24 hrs to 13.00, 11.60, 11.40 mg/24 hrs. respectively within a period of 60 days (Table 6).

Table 6. Effect of *Bryophylum pinnatum* on urinary creatinine.

Groups	Mean Initial (ml/24 hrs)	Mean (ml/24 hrs)			
		15 days	30 days	45 days	60 days
A	19.70	19.86	20.06	20.80	20.50
B	19.80	19.00	17.50	15.50	13.00
C	19.74	18.30	16.90	13.40	11.60
D	19.92	18.20	17.50	13.80	11.40

Serum calcium

The serum calcium level is group B, C and D was gradually decreased in compair to control group (Table 7).

Table 7. Effect of *Bryophylum pinnatum* on serum calcium.

Groups	Mean Initial (ml/24 hrs)	Mean (ml/24 hrs)			
		15 days	30 days	45 days	60 days
A	10.2	10.70	11.50	10.3	10.1
B	10.3	10.00	9.12	8.6	8.0
C	10.2	9.70	9.10	8.3	7.5
D	10.4	9.70	9.10	8.2	7.2

Serum Phosphorus

Similar observation i.e. decreased level of serum phosphorus also found in all groups except control group (Table 8).

Table 8. Effect of *Bryophylum pinnatum* on serum phosphorus.

Groups	Mean Initial (ml/24 hrs)	Mean (ml/24 hrs)			
		15 days	30 days	45 days	60 days
A	9.83	10.1	10.9	11.6	10.1
B	9.75	9.6	9.0	8.5	7.6
C	10.50	8.6	8.2	7.3	6.3
D	10.20	9.5	8.3	7.3	6.1

Serum Creatinine

Like serum calcium and serum phosphorus the level of serum creatinine was also stationary in control group, while in other groups the level was remarkably decreased after 2 months (Table 9).

Table 9. Effect of *Bryophylum pinnatum* on serum creatinine.

Groups	Mean Initial (ml/24 hrs)	Mean (ml/24 hrs)			
		15 days	30 days	45 days	60 days
A	19.62	19.87	20.5	20.62	20.25
B	19.75	18.87	17.5	16.32	14.62
C	20.20	18.30	16.9	15.60	14.00
D	19.70	18.40	17.2	15.60	13.70

Serum Uric Acid

There was no significant change observed in serum uric acid level, as most of the stones are either calcium oxalate or calcium phosphate in nature was confirmed by stone analysis (Table 10).

Table 10. Effect of *Bryophylum pinnatum* on serum uric acid.

Groups	Mean Initial (ml/24 hrs)	Mean (ml/24 hrs)			
		15 days	30 days	45 days	60 days
A	8.3	8.1	8.00	7.75	7.8
B	8.3	8.1	8.15	8.00	8.0
C	8.4	8.3	8.30	8.14	8.0
D	8.5	8.3	8.34	8.26	8.0

Growth of Stone

In control group formation of stone in urinary bladder was observed in all experimental animal and in some animal the size of stone was big and multiple. The stones were shining, whitish, smooth and compact. After 60 days the mean net wt. of stone was 1407.8 mg where as in other groups B, C and D though there was formation of stones but the size of stones were small, brittle and irregular. In some animals there was very minimum deposition of stone over nidus was observed. The deposition of stone substances was very minimum in group D i.e. 1.6 mg. In comparison to the other two groups i.e. B and C. Among the treated group in total extract group i.e. group B the deposition was more than fresh juice treated group (group C) i.e. 35.25 mg in group B while 6.80 mg in group C.

CONCLUSION

In experimental animal *Bryophylum pinnatum* increases urinary output and acts as a diuretic without causing electrolyte imbalance. The trail drug reduces pH due to presence of citric acid and isocitric acid, citrate prevent calcium to combine with oxalate or phosphate in urine. Thus it prevents deposition of calcium oxalate and phosphate

and reduce the chances of formation of stone. *Bryophylum pinnatum* also reduce serum and urinary electrolyte (calcium phosphorus) which is responsible for formation of stone so the observation suggest that the drug prevents formation of stones and even disintegration the stone evidenced by soft surface and brittle in nature.

Table 11. Effect of *Bryophylum pinnatum* on growth of stone in different group.

Group wt. of Zn	Bits in mg (A)	Wt. of formed stone in mg (B)	Net wt. of stone in mg (B-A)
A	17.2	1425.00	1407.80
B	16.5	51.75	35.25
C	17.2	24.00	6.80
D	16.8	18.40	1.60

When the drug was given prophylectely i.e. prior to implantation of zinc pellet in urinary bladder was found more effective in prevention of stone formation.

These findings can be well explained by Ayurvedic principles. According to that Kapha plays the key role in the formation of Ashmari (Stone) but other doshas like vata and pitta are also essential for growth of stones. Due to properties like guru, snigdha, picchila the Kapha not only acts nidus but also binds with other doshas and get consolidated to form stone. The diuretic properties of the Pasan bheda is probably due to sheeta virya and due to this effect it washes out the doshas from urinary bladder as a result of doshas could not accumulate in bladder to from stones. The Pasan bheda possesses laghu and rukcha guna, so it is effective in kapha roga. On this property, in Ashmari roga Pasan bheda controls kapha doshas and reduces the chances of nidus formation of stone as well as it reduces rate of growth of stone by inhibiting the bindings properties of kapha dosah.

Education and Research in Shalya Shalakya and Sangyaharan

PROF. L.M. SINGH*

On this occasion I would also like to remember Prof. P.J. Deshpande, who has been the pioneer in reviving the status of Shalya Shalakya. It was he who made Shalya Shalakya a practical subject fit for teaching, practice and research whereas earlier Shalya Shalakya was limited to the theoretical teaching from text books only. He can really be called "Sushruta" of Modern times. His untimely health has been a great loss to this speciality. I would like to pay my humble reverence to the departed soul.

I have chosen the topic of my talk "Education and Research in Shalya Shalakya" for the obvious reasons that although Shalya Shalakya has always been recognised as one of the prime speciality of Astanga Ayurveda, the teaching and research in this subject has remained a question mark and a subject of controversy all these years. One of the glaring deficiency in Ayurvedic education and practice has been the total neglect or only a token recognition of surgical training and practice. Surgery has become almost exclusively a modern medical subject and Ayurveda has become synonymous with internal medicine - Kayachikitsa.

The deficiency in the teaching and practice of surgery in Ayurveda have become more glaring because in the present time surgery has made revolutionary changes. Today no organ of our body is sacrosanct for the surgeon's knife. Number of our organs are removed and replaced by borrowed ones with impunity. In this context, persons ask repeatedly whether surgical education is necessary for the students of Ayurveda and Ayurvedic practitioners. Similar confusion is also present even amongst the Ayurvedists who are at the helm of affairs. It is argued that Ayurveda can hardly contribute to the modern surgery and that teaching and research in Shalya Shalakya should be limited only to the extent that Ayurvedic practitioners my attend to the minor cuts and wounds.

When we look back in the history of Ayurvedic education, basic issue which has been raised time and again has been the question of inclusion of modern medicine in the curriculum of Ayurveda. Whether, it would be included at all what should be the quantum of modern aspects and what should be the mode of incorporation has been changing from the beginning of formal education in Ayurveda. Whereas the pioneers in the early part of the century were clear in their view that modern concepts. Technology should be incorporated in the Ayurvedic education there has been a total reversal of this attitude by later workers who insisted on Suddha Ayurvedic system.

Above changes in the attitude of Ayurvedic educationists is reflected even in the

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names of the institutions which were established in the different periods as Ayurvedic Medical College. College of Integrated Medicine or simply Ayurvedic College as also in the degrees awarded by them. In these institutions modern subjects were taught as such by the modern doctors.

In the early stages Ayurveda formed a part of Sanskrit or Oriental learning which eventually gave way to the establishment of independent Ayurvedic faculties or State Boards and faculties. Simultaneously several examining bodies, as Hindi Sahitya Sammelan, Ayurveda Maha Sammelan and similar bodies in different states conducted examinations awarding various categories of degrees in Ayurveda. No modern subjects were included in the curriculum, neither practical training was imparted and hence standards were variable. During this period credit must go to Pt. Madan Mohan Malviya that he started an Ayurvedic College in the University set up for he first time. It is significant that with the resources at his command he could very well have started a modern medical college instead of an Ayurvedic college. He maintained that Ayurveda supplemented with relevant modern medicine should be medical system of India. This institution produced eminent scholars of Ayurveda.

But there has been a gradual increase in the quantum and quality of modern subjects in the curriculum. This resulted in the aspiration of the students to be called "Doctors" of modern variety which was also reflected in their practice.

Even in this period Shalya Shalakya was taught as purely theoretical subject which has to be studied for examination purpose only whereas training in modern surgery had the full complement of theory and practice. There was a tacit admission that surgery is exclusively a modern preserve. Even with this handicap number of eminent general and eye surgeons were produced in the period of Prof. Udupa, Dr. Deshpande, Dr. R.P. Gupta, Dr. Ramanuj Mishra to name a few.

With this background specially when most of graduates of these colleges mostly practiced modern medicine with a token regard for Ayurveda, reaction was bound to occur amongst the Ayurvedic educationists and administrators which resulted in the formation of committees like Vyas Committee, Sampurnanand Committee which recommended exclusion of modern subjects to preserve the purity of Ayurveda. They went even to the extent of naming the Ayurvedic institutions and degrees as Suddha Ayurveda. This retrograde step put the Ayurvedic education in such a position that the graduates of Suddha Ayurveda had to go to the compounders to learn the simple procedure of catheterization and fluid supplementation. Teaching of Shalya Shalakya was worst affected as neither the students were exposed to the modern surgery nor the teachers could give those boys even the elementary ideas of surgical training. More so is a number of States, teachers who had been teaching throughout their carrier other specialities of Ayurveda were promoted as head of the Department of Shalya Shalakya obviously causing further deterioration of training standards. In fact there were number

of Ayurvedic institutions where department or sections of Shalya Shalakya did not exist. There were no beds in the hospital assigned to Shalya Shalakya. Even where they existed quality of patients care was primitive or else they remained vacant. Central Council of Ayurveda was established in 1970 and now a uniform ayurvedic course is presumed to have been implemented, but the basic questions still remain whether in this curriculum also, we have been able to do away with the hang up of the past and taken a realistic attitude in framing it. All over the country now students who are admitted to the Ayurvedic courses are no different than any other technical course, but we are conscious of the fact that there is much to be desired in the final products were produce as compared to the products of the other technical courses.

Under these circumstances it is imperative that the Government bodies at large and Ayurvedic Council in particular should make a clear cut policy decision about the quality and quantum of the teaching of this subject specifically regarding its practical aspects.

We do not lag behind in extolling the virtues of Ayurveda that it is a medical system complete in itself. We repeat the Shlokas of Sushruta, but are we following its precepts to any extent? Was it not Sushruta who was the first to advise dissection of human cadavers to have a first hand knowledge of human organs? Was it not Sushruta who emphasized the importance of practical training and compared the theory and practice to the two wheels of the chariot or the two wing, of a bird? Furthermore, Sushruta has never been dogmatic in his approach. In fact, he has specifically directed that one should learn all the related sciences to be perfect in his own science and the physician surgeon should devise any instrument or adopt any procedure according to the need of the patient.

Basic objective of medical education of any system can not be served if the graduates coming out are deficient in understanding the current level of medical care being provided and may be doing harm to the patient. Ayurveda or Ayurvedic practice should not e promoted because it is a part of our cultural heritage or because it is cheap. Only justification for its promotion should be that it is effective and can answer to the problems of today. If Ayurveda or Ayurvedic graduates can only provide second grade medical care, I believe there is no justification for its promotion. Therefore, if Ayurvedic education is to be relevant today Ayurvedic graduates must be aware of all the developments, modern science has made in the patient care. Any Ayurvedic graduate who deals with the patients' life whether in the city or in the village should not only be able to offer the best of his own system but also guide and direct the patient where and how he can have the best treatment possible.

We should also not hesitate to admit that we are not perfect. Has not Sushruta said that there is no limit of learning Ayurveda? No medical system in the world is perfect. It modern medicine with all its advancements, billions of outlay and millions of workers working in developing it too do not claim to have panacea for all the diseases,

there is no reason why Ayurveda should claim to have the cure for every diseases on earth. Most important thing which need to be brought home to the Ayurvedic graduates is not that Ayurveda can cure all diseases not treatable by modern medicine, but that Ayurveda represents a different outlook, a different approach and perhaps a better method of patient care.

Ayurveda does not concern itself only with the cure of the disease, it concerns itself with all aspects of life, somatic, psychic and spiritual as well. Modern approach of analytical thinking may give us an understanding of the Physics and Chemistry of the body constituents, but it is hardly enough to understand life itself. Iron molecules, in a knife or haemoglobin may be the same chemically, but they are quite different is self evident. Life can be hardly measured or understood in terms of qualities of sodium, potassium etc., because life is not an object, but optimal relationship of objects. Similarly health and happiness can not be measured in terms of objective quantities of physical and chemical constituents. It is his aspect that Ayurveda emphasizes most. If you review the developments in modern medicine the validity of this statement becomes evident. In the early years modern medicine was concerned with the somatic aspects only. It is only in recent times that it is taking cognizance of the psyche and day will not be far when modern medicine will have to be taken into account, Soma, Psyche and Spirit.

Further let us not make our students and ourselves be apologetic about Ayurveda being unscientific. The emphasis of western scientific thought has been on analysis and objectivity whereas our ancients were concerned with synthesis and subjective perception. Objective details for them were only the means or steps to the knowledge of ultimate not the goal itself. Whereas analysis could lead to the knowledge of the parts, it is synthesis which can give us the picture and experience of the whole.

Furthermore, knowing - knowledge can never replace reality of experience. Intellectual concepts may prepare us for experience but can never be the experience itself. Concepts are necessarily intellectual and rational, but experience can be purely initiative, nevertheless a definite reality. No amount of intellectum exercise can substitute for the real experience. A professor could write columns on hydrodynamics, but may not know how to swim. It is this fundamental difference in the so called modern scientific methodology and eastern so called experimental approach which has been the cause of confusion, although both ways one tries to seek the ultimate truth.

All students of Ayurveda should be oriented to the above facts and also that rationality and objectivity is not the `be all' and end all' of human experience and that subjective perception is equally a reality and it is more pertinent when we are dealing with life processes and living beings specially the most evolved of the living being man who can hardly call a conglomeration of physical body parts or a machine run by physical or chemical reactions. It is only when it is understood that it is the

participation of Sharira, Indriya, Mana and Atma which is the reality of this phenomenal world, we will be able to appreciate the concepts of Doshas, Rasa, Guna, Virya, Vipaka etc. I consider it imperative that the curriculum should reflect this basic approach of Ayurveda and it is this which will give them the identity of Ayurvedists.

In the teaching of Shalya Shalakya manual dexterity, technique and adoption of technology are equally important. Although objective of the treatment e.g. drainage of pus, removal of a disease and organs may have remained the same, technology have greatly changed and it will be unjustified on our part if we can not give the benefit of these developments to the patients. We may not produce `Surgeons' in the modern sense of the word, but as a basic graduate of medical science of whatever system it may be, the should be made aware of the modern developments, undertake life saving procedure, recognize the condition which need specialized therapy and conduct appropriate therapy himself according to his aptitude and training.

I am aware from the past experience that students with the modern knowledge and training may tend to practice modern medicine call themselves `modern doctors' etc. This has happened in the past because we as teachers of Ayurveda have not been able to give them the self confidence in our own science. Glaring deficiencies in the teaching and training of Shalya Shalakya, status of Ayurvedists in the social and official heirachy has been mainly responsible for this attitude of inferiority complex in the Ayurvedic graduates, who would rather be known as modern doctors. Further the Vaidyas or Ayurvedists who claim Ayurveda as a complete science not needing any change only demonstrate the inferiority complex in reverse. Ayurveda can not be great by tall claims only. Only when Ayurveda and Ayurvedists stand on its own in comparison to other systems of medicine, students and we shall be able to shed off this complex. There fore, the objective of Ayurvedic education should not be to put the students in a closed door system but to expose them to all the current developments and show them in which way Ayurveda can contribute in the current problems. Verbal eloquence can not substitute for actual demonstration.

To demonstrate the effectiveness of Ayurvedic therapy and validity of Ayurvedic concepts, Hospital services should be an integral and essential component of Ayurvedic education. No Ayurvedic principles whether fundamental or therapeutic can be understood without the participation of all faculties of human being. The Rasa, Guna by themselves will remain simple words if it is not understood in terms of properties/reactions exhibited by substances and as perceived by human senses. Central Council has fixed the hospital bed ratio to student admission, but it need to be followed in actual practice. There are still a large number of ayurvedic college with no hospital of their own or only a token number hospital beds. We shall be making a mockery of Ayurvedic education if the students go out of the Ayurvedic colleges without ever having observed and participation gin the clinical management of the patients. It is

this basic flaw which is responsible for the lack of confidence of Ayurvedic graduates in their practice. Only if we as teachers can demonstrate to the students the effectiveness of Ayurvedic therapy unequivocally by the criteria acceptable by modern methodology, they will have the confidence to use Ayurvedic therapy in practice.

Regarding post graduate training it is assumed that any postgraduate in the subject will have the comprehensive of frontiers of the knowledge in the subject with requisite competency. If it is so, the post-graduates of Shalya Shalakya are expected to know what Ayurveda can contribute to surgery and unless he is directly involved and practices surgery, he can not e conversant with its problems. Hence, these postgraduates not only should have a sound theoretical background of surgery and allied disciplines, they themselves should be involved in the management of surgical patients. Further, if they are going to be teachers in the subject, their quality of teaching will remain deficient if they are not equipped with the practical aspects. Similarly in their practice, it is to be expected from them that them are able to recognise surgical conditions, treat as possible and refer them to the appropriate a place in time. Hence it is essential in the postgraduate training that the students are exposed to surgical management and also perform surgery.

Competency expected from the graduates and postgraduate in Shalya Shalakya should be at least as follows :

1. They should be able to recognize the surgical condition and treat them appropriately by Ayurvedic principles, drugs or with the help of modern technology.
2. They should be able to perform simple surgical procedures.
3. They should recognize surgical emergencies and refer the patient to appropriate place in time.
4. They should be able to attend common emergencies and undertake life serving procedures.
5. They should be competent to participate in National Family Planning Programme.

Postgraduates

1. They should be able to perform surgery at par with a general surgeon.
2. They should be able to formulate research projects on surgical problem and. undertake the research.
3. They should be able to perform routine emergency operation.
4. They should be able to interpret, explain and practice the surgical concepts of Ayurvedic texts.

In order to improve the existing situation and achieve the above objectives suitable modification are urgently necessary as follows :

(a) **Curriculum:** It should be made more explicit and unambiguous so that teachers can taught clearly understand it confusing and controversial topics should be kept at minimum. Modern subjects should be incorporated wherever necessary without hesitation. Change of nomenclature from common English language to Sanskrit does not change it from modern to Ayurveda. Besides, theoretical teaching, requisite practical training should be insisted upon.

(b) **Teaching faculty:** Quality of teachers must be improved as the success of any course will depend upon it. Only postgraduate of the speciality should be appointed as teachers as well as examiners unless the teacher himself practices the speciality he can not be an effective teacher. The only way to create self confidence in the students is that they get practical demonstration of the speciality. Furthermore, it is expected that the teachers have all upto date knowledge of the subject whether included in the curriculum or not. Students are supposed to follow the curriculum, teachers do not have a prescribed curriculum and can not limit their knowledge to the curriculum only. It is also necessary that the teachers be innovative and adopt the teaching methodology developed these days. For this purpose refresher courses should be conducted regularly of the teachers.

(c) **Physical Facilities:** Appropriate laboratories and adequate hospital facilities should be made an essential prerequisite to run any ayurvedic institution. Although Central Council have prescribed the norms it should be strictly followed. Ayurvedic institutions without hospitals or with empty hospital beds is making a mockery of Ayurvedic education. The students should observe the principle of management in practice no only in the theory.

(d) **Students:** We now have a standard admission, qualification however, there is need to improve the quality of students. It will be best if we could get only those students motivated an committed to learn Ayurveda rather than rejects of modern medicine for the purpose a separate pre-ayurvedic tests could be organised.

(e) **Social and Legal support:** Frustration is bound to occur in Ayurvedic graduates if after the completion of their study having the required competence, they are denied the privilege of practicing what they have learnt. Besides it amounts to a collosal waste of national efforts. There should be no bar on practice of whatever the graduates have been trained for, whether Ayurveda or modern and in fact all Ayurvedic graduates should be brought into the mainstream of National Health Care. I would like to place on record the appreciation of invaluable efforts of NIMA in this direction and I hope it will have a successful outcome.

Research in Shalya Shalakya

As with education research in Ayurveda specially in Shalya Shalakya has been controversial. There were doubts whether there is any scope at all or whether there will

be any fruitful outcome of research in Shalya Shalakya. In fact in the early phase when Research Institute was established at Jamnagar Shalya Shalakya was not included. It was only in 1963 that a section of Shalya Shalakya was established in postgraduate Institute of Indian Medicine in Banaras Hindu University and the research activity was initiated in the subject. Further, I would like to again mention Prof. P.J. Deshpande who brought dynamism to the research activities. 50 Ph.D. and 200 M.D., M.S. have so far bee produced by this department and it should be admitted without exaggeration that the research work done in this department has provided the impetus to the establishment of postgraduate departments and guidelines for research in the subject in rest of the country.

Besides the various postgraduate departments of Ayurveda in the country we now have an apex body Central Council of Research in Ayurveda which should be providing guidelines for research. The research activities of the council have been broadly categorised as follows :

1. Clinical and Fundamental Research
   - (a) Clinical therapeutic trials
     Evaluation of efficacy of single drugs, simple herbal preparations and herbomineral preparations.
   - (b) Fundamental aspects of diet, Agni, Prakriti etc.
2. Drug Research
   - (a) Medico-Botanical survey, identification, cultivation herbarium and museum.
   - (b) Drug standardization.
   - (c) Pharmocognostical, chemical pharmacological and toxicological studies.
3. Literacy Research
   - (a) History of Medicine
   - (b) Documentation/Publication
   - (c) Revival of oriental literature.
4. Family Welfare Research Programme
   - (a) Clinical Evaluation.
   - (b) Pharmacological Research studies.
   - (c) Toxicity studies.

The areas in which we have been engaged are conceptual and therapeutic trial of drugs and procedures in the management of surgical conditions. We believe we have demonstrated the potential of research in several areas.

We have tried to collect and systematize all materials regarding surgical instruments and surgical procedures described in Sushruta with their relevance for today. Besides, systematization and interpretation of the surgical concepts we have also tried to identify and determine the symptom complexes and diseases described in Ayurveda according to the clinical conditions we some across these days e.g. Gulma, Shoola, Mutraghata, Mutrakrichchra etc. It is imperative that there should be no ambiguity in the terms used by Ayurvedists and disease identified as X in the north should not be Y in the south.

Another area we have working on have been parasurgical measures described in Ayurveda. Although we did study Agnikarma, Raktavasechan by Jalouka; but it has been Kshara Karma and kshara Sutra treatment which we had able to extensively use in clinical practice. We are now confident that Kshara Karma is one of the best method for wound debridement and Kshara Sutra management of chronic sinuses as Fistula-in-ano.

Sangya Haran - Anaesthesia is an essential ancillary discipline of Shalya Shalakya and we have tried to explore whether Ayurvedic drugs, concepts and procedures can contribute in this field also. We have observed that -

(a) Study of Prakriti of Surgical patients can predict the anesthetic requirements and obviate the usual anaesthetic complications.

(b) Number of Medhya drugs can be used as supplements or substitutes for preanaesthetic drugs with lesser side effects and better post-operative recovery.

(c) Procedure as Poorva Karma can better prepare the patients for smooth conduction of anaesthesia.

(d) Vedanahar Dravya P.O. Management.

In Shalakya we have been engaged in finding solutions to (i) errors of refraction and accommodation, (ii) allergic conjunctivitis and trachoma (iii) raised intra-ocular pressure, (iv) corneal ulcers and opacities, (v) chronic sinusitis and rhinitis, (vi) recurrent tonsillitis and other septic conditions of the throat etc.

Some Ayurvedic drugs have been found to be effective in the early stages of myopia. These drugs are – Triphala-Ghrita, Yashada Bhasma and Saptamrit Loha in order of efficacy. However, no drug has been found effective in advanced cases of refractive errors. Similarly a combination of Madhu, Haridra and Drabaharidra given orally also locally in the form of eye-drop has been found to be effective in allergic conjunctivitis with definite advantages over the existing steroid therapy. In cases of chronic sinusitis, a combination of Mahalakshmi Vilasa Rasa given orally and Shadhbindu Taila used locally as nasal drops, provides in relief and cure if used over a long period. There were encouraging results in other areas also.

The area in which I have been personally involved has been the management of urinary disorders. Common urinary. Disorders which have been studied are urinary calculi, U.T.I. and B.P.H.

Varuna, Tirnapanchamool, Kulatha, Goshru and a few other drugs have been tried in urolithiasis. Our results suggest that (i) recurrence can be prevented if these drugs are taken regularly, (ii) spontaneous passage is obtained in moderated size stones.

Therapeutic trials - Varuna Trinapanchmool, Chandraprabha Vati, Chandranasava, Trivanga Bhasma have been considered effective in urinary disorders.

At last but not the least I thank to the organisers for inviting me to share my view on this gracious occasion Sangyaharan Day.

Evaluation of Drugs Active at the Neuromuscular Junction

S. PRIYAMBADA AND R.K. GOEL*

Neuromascular blocking agents cause such profound effects and with sufficient rapidity that a number of simple tests can be used initials to detect the activity.

INITIAL SCREENING TESTS

Mouse

It is usually the first animal to receive a test compound – (1) The inclined screen or (2) the rotarod procedures, will give some indication of activity at the neuromuscular junction.

1. **Inclined screen method (Hoppe, 1951) :** Mice are placed on a fine mesh wire screen which is inclined at 50° angle from the horizontal. Administration of a neuromuscular blocking agent (30 min to 60 min before) result in the development or paralysis and their abrupt sliding off the screen.

2. **Rotarod procedure (Watzman et al., 1968) :** Test drug given 1 hr before. Mice are placed on the rod, 2″ in diameter, separated by a piece of cardboard (3 inches apart and 10 inches in diameter so that they not interact with each after) and has to be at least 15 inches above the table top to prevent the animals from spontaneously jumping off the rod. The rod is made to rotate at 10 rpm. The number of animals remaining on the rod at 90 seconds is an inverse estimate of the neuromuscular deficit caused by the drug.

3. **Straub tail method (Pick and Richard, 1948) :** Mice weighing between 18-20 g are given 0.5 mg of morphine sulfate subcutaneously. They become restless and exhibit a Straub tail phenomenon in 5 to 10 min which persisted for 2 hr or more. Test compound (0.5 ml/mouse, ip), if having neuromuscular blocking (NMB) property will show disappearance of the excitement and relaxation of the tail within 5 to 10 min of administration. It lasts for 10 to 25 min and then the sign of morphin's activity gradually reappeared.

Rabbit

1. **Rabbit head drop method (Varney et al., 1949) :** Rabbits weighing 2 to 3.5 kg and have received at least two 'head drop' doses within the previous 7 days are selected for the study (Tubocurarine 0.31 mg/ml solution, 0.1 ml/every 15 seconds through marginal ear vein till head drop end point), when the animals head fell on the board and could not the raised or turned in response to a light tap on the animals back (end point 3-5 min normal).

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Test compound, thus, can be studied for their initial NMB property. Further, it was also found that premedication with the cholinesterase inhibitor neostigmine (0.05 g/kg iv), increased the head drop dose of NMB which act competitively.

With positive results in these tests, the next probable approach is to study in various *in vivo* and *in vitro* methods to find out the exact mechanism of action i.e. either presynaptically (e.g. hemicholinium like drug) or postsynaptically (both anti-depolarizers and persistent depolarizers).

***IN VIVO* METHODS**

Sciatic nerve - gastrocnemius muscle (Dog/cat/rabbit/rat)

The sciatic nerve can be easily isolated at mid-thigh level. To prevent sensory impulses from being conducted to spiral cord, the nerve is either crushed or sectioned proximal to the point at which the electrode is applied. The tendon is isolated at the ankle joint and is tied to the recording system. Lower leg of animal is made immobile not to affect the recording.

The nervous stimulus is usually a square wave of 0.5 to 2 msec duration of supramaximal intensity. More information can be obtained by using a bilateral preparation in which one nerve is stimulated at 1Hz and the other is stimulated at 0.1 Hz. All compounds active at the post junctional membrane will be active on both sides, but a compound which acts pre-junctionally e.g. hemicholinium will cause transmission factor on the side being stimulated at the faster rate.

To gain information concerning the mechanism of the neuromuscular blockade (pre- or post-junctionally and if post-junctionally, whether competitive or persistent depolarizers), muscles from birds (chicken) or amphibia (frog) are very useful.

1. Chicken

Depolarizing type NMB compounds (succinylcholine or decamethonium) cause contracture (rigid extension of the limbs and a retraction of the head i.e. opisthotonous), while Anti-depolarizers (tabocurarine or gallamine) cause a flaccid paralysis in chicken.

The different response of chicken muscles to the two types of neuromuscular blocking agents is useful in the sciatic nerve - gastrocnemius - muscle preparation (Pelikan et al., 1954). Chicken anaesthetised with pentobarbital, trachea cannulated and animal put on artificial respiration. Muscle is attached to the recording apparatus under 100-200 g tension and tetanic stimulation lasting 0.2 seconds administered every 10 or 20 seconds to the nerve. The drugs are administered i.v. and the dose which decreased the contraction height by 50% PD_{50} is determined.

Compounds active at the NMJ will decrease the force of contraction but those which act by depolarization will initially cause a contracture. Competitive compounds

may be antagonised by cholinesterase inhibitor such as neostigmine while that of persistent depolarizers will be potentiated, but will be antagonised by a competitive compound. Hemicholinium will be antagonized by choline administration.

2. Frog

Claude Bernard (1856) demonstrated the peripheral site of action of NMB agents by a simple technique in the frog. One hind leg of the frog is tied with a ligature sufficiently tight enough to occlude the blood supply to the limb without affecting the nervous conduction. The sciatic nerve to each hind limb is exposed on the thigh and stimulated electrically to determine the intensity required to cause an ipsiolateral contraction and the intensity required to elicit a crossed extensor reflex. Once these values are obtained, the test drug is administered into the ventral lymph sac. Electrical stimulation is repeated after 5 min until the contraction response was blocked in the unligated leg, while, the ligated leg still respond to stimulus, indicating that it was blood borne. Further, electrical stimulation of the sciatic nerve in the unligatured leg with a stimulus of sufficient intensity to elicit the crossed-extensor reflex will still be positive indicating the normal functioning of the spinal cord. At the same time, direct stimulation of the muscle in the unligatured leg still caused a contraction. Thus, the test drug doing the above effect would be undoubtedly affecting the function of neuromuscular junction.

***IN VITRO* METHODS**

In vitro, the rat phrenic nerve-diaphragm has been found to be useful especially for compounds which have a competitive mechanism of action. The nerve-muscle preparations from the chick or the frog can be used to differentiate competitive versus depolarization as the mode of action if the force of contraction is recorded. They can also be used to record the membrane potential directly to demonstrate whether depolarization is involved in the neuromuscular blockade. Followings are the *in vitro* methods used for screening NMB activity of drugs :

1. Rabbit/cat - isolated lambrical muscle - nerve preparation.
2. Guinea big - oesophagus-vagas nerve preparation.
3. Rat obturator nerve - anterior gracilis muscle preparation.
4. Rat phrenic nerve diaphragm preparation
5. Chicken biventer cervicis muscle
6. Frog rectus abdominis muscle
7. Frog sciatic nerve - gastrionemius/muscle preparation.

Rabbit

The medial lumbrical muscle of rabbit (18 mm long, 1 mm diameter, 15 g weight) is taken out along with the nerve and placed in medium which is kept at 38°C and gassed with a mixture of 95% O_2 and 5% CO_2. Two platinum wires, one for muscle (direct

stimulation) and another for nerve (indirect stimulation) are used to stimulate either of them when required. The contraction height of muscle is recorded after direct/indirect muscle stimulation. Addition of NMB drug, leads to a dose dependent decrease in the height of the contraction after indirect stimulation with little or no change in the contraction height caused by direct stimulation. Persistent depolarizers caused a biphasic blockade of the response to indirect stimulation. The first phase is maximal up 5 to 20 min, while 2nd phase of blockade develop slowly and complete at 3 hr. This second block is competitive and can be antagonised by anticholinesterase.

Guinea pig

Oesophagus-vagus nerve preparation - Action Similar as above.

Rat

1. Obturator nerve-anterior gracilis muscle preparation.
2. Phrenic nerve diaphragm muscle preparation (Bulbring, 1946).

Adult rat is killed and bled. The thoracic skin and right thoracic wall is removed. The mediastinium behind the sternum is severed and a cut is made just above the frontal insertion of the diaphragm. Care is taken not to injure phrenic nerve. Left lung is removed. The left abdominal in muscles are cut along the costal margin and the last rib is held with a pair of forceps. A pie shaped piece of diaphragm is now cut so that the phrenic nerve junction with the muscle is centrally located. About a 2.5 cm length of nerve is removed with the muscle and placed in a bath containing tyrode's solution (36-37°C, 95% O_2 & 5% CO_2). This preparation is good for determining compounds with a competitive mechanism of blockade.

Chicken

Biventor cervicis muscle of the chick (Ginsborg and Warriner, 1960) - Animal weighing between 50-250 g anaesthetised with phenobarbitone. The incision ran from back of skull along the midline of the back of neck down to base. The muscle on either side removed. Thread is tied around the upper belly of the muscle. Muscle removed with the nerve and then placed in a bath along with the electrodes attached both with the muscle and nerve. Both tubocurarine and decamethonium caused a decrease in contraction height but decamethonium initially produces a contracture.

Frog

1. Rectus abdominis muscle: Dose-response study with acetylcholine and its shifting towards right with d-tubocurarine.
2. Sciatic nerve – gastrioneumius muscles preparation: A compound which caused depolarization not only would decrease the contraction height but would also cause a contracture.

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Neonatal Resuscitation

B.D. BHATIA* and B.V. BHAT**

SECTION A - INTRODUCTION

Neonatal resuscitation is an emergency. The delay in initiating breathing will make subsequent resuscitation difficult and may cause irreversible brain damage in the body. The following two are the important steps for successful resuscitation of newborn.

1. Anticipation of the need for resuscitation.
2. Adequate preparation of equipment and personnel.

ANTICIPATION OF THE NEED FOR RESUSCITATION

It is not always possible to anticipate birth asphyxia and the need for resuscitation antenatally, however, the following factors are considered high risk and the attending team should be prepared to face the challenge of successful resuscitation. The incidence of birth asphyxia is always more than what is anticipated.

HIGH RISK FACTORS

(a) Pre-term, post-term and small for gestational age babies.
(b) Multiple Pregnancy
(c) Antepartum hemorrhage
(d) Pregnancy induced hypertension
(e) Polyhydramnios/Oligohydramnios
(f) Malpresentations
(g) Maternal drugs - sedatives and anaesthetics
(h) Previous still birth and early neonatal deaths
(i) Operative delivery
(j) Membranes ruptured for more than 24 hours
(k) Evidence of fetal distress – (i) Fetal heart rate, <100, >160 or irregular (ii) Meconium stained liquor except in breech delivery (iii) Decreased, increased or absent fetal movement.

PERSONNEL

At least two trained persons should be available during active resuscitation. This could be a team of physicians and nurses who can work together. It is not sufficient just to have someone "on call" but mandatory that the trained persons are present at the time of delivery.

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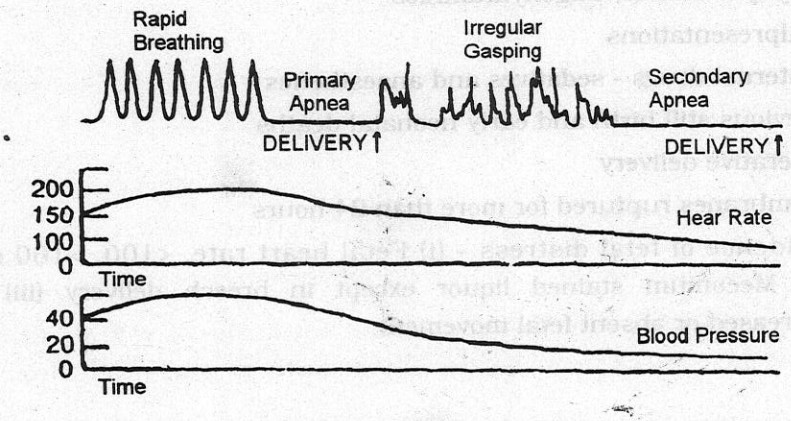
EQUIPMENT

1. Radiant Warmer
2. Suction apparatus - Bulb syringe/Dee-lee mucous trap/oral mucus sucker
3. Oxygen cylinder/Central Oxygen with flow meter
4. Bag and mask with adaptors
5. Oral airways
6. Endotracheal Tubes - Uniform external diameter (not with tapered lower end). Size 2, 2.5, 3, 3.5 & 4 for different weight babies
7. Laryngoscope with straight blades of size 0 (Preterm babies) and 1 (Term babies)
8. Suction catheters (No. 5 and above)
9. Sterile disposable syringes and needles
10. Scalp vein needles & Umbilical Cannula
11. Medications : Adrenaline (1:10,000), Naloxone, Sodium bicarbonate (7.5%), volume expanders (saline, plasma), vasopressors (Dopamine), 5% or 10% Dextrose solution and Distilled water.

PHYSIOLOGY OF BREATHING

1. Whenever there is a hypoxic stress, the respiration in fetus becomes rapid and then goes into apnea called PRIMARY APNEA. This primary apnea is then followed by slow irregular breathing movements eventually ending in Secondary or Terminal apnea in the absence of resuscitation. The secondary apnea is associated with a fall in heart rate and blood pressure (Fig. 1).



The delivery can take place during the phase of primary or secondary apnea. The primary apnea will respond to stimulation whereas secondary apnea will need positive pressure ventilation. Any delay in resuscitation during secondary apnea will make further resuscitation more difficult and increase the chances for brain damage. It is difficult to decide the type of apnea in an apneic infant at birth and hence all apnea at birth should be

treated as secondary apnea to avoid further delay in resuscitation and prevent subsequent brain damage.

2. During intrauterine life as the alveoli are filled with fluid, the oxygenation of fetal blood is maintained through placenta. During birth major portion of the fluid from lung is squeezed out While remaining small amount is subsequently absorbed into the lymphatics. The alveoli open up by first few breaths. It takes considerable amount of pressure in the lungs to overcome fluid forces and open the alveoli for the first time. The first few breaths may require 2 to 3 times the pressure required during succeeding breaths. The pulmonary artery also now opens up with resultant increase in pulmonary circulation and the gradual closure of the ductus. Thus for proper oxygenation at birth opened up alveoli free of fluids and opened up pulmonary artery are the two basic pre-requisites.

PROBLEMS ANTICIPATED

1. Fluid may remain in the lungs if :
   a. Infant is apneic at birth
   b. Weak initial respiratory effort as seen in preterm infants and in infants depressed as a result of asphyxia, maternal anaesthesia or drugs.
2. Blood flow to lungs may not increase as expected.
3. Asphyxia results in hypoxia and metabolic acidosis (anerobic glycolysis resulting in lactic acid accumulation). Acidosis leads to persistence of pulmonary arteriolar constriction and patent ductus, a situation of persistent fetal circulation. As long as decreased pulmonary perfusion exists, proper oxygenation of tissues is not possible even with effective ventilation and opened up alveoli.

MILD ASPHYXIA

Adequate Ventilation will improve pulmonary perfusion and hence oxygenation.

SEVERE ASPHYXIA

Adequate ventilation + medication (to combat acidosis) will improve pulmonary perfusion. Severe asphyxia can be present at birth or may result from inadequate resuscitation.

EVALUATION

The infant is evaluated on three parameters :

1. Respiration
2. Heart rate
3. Colour

Although Apgar score is done at 1 min but resuscitation should start immediately after birth. Hence apgar score is used for assessing the effectiveness and not for initiating resuscitation.

ABC OF RESUSCITATION

A	B	C
Establish open airway	**Initiate breathing**	**Maintain Circulation**
• **Positioning**	• **Tactile stimulation**	• **Chest compression**
• **Suctioning**	• **Positive pressure**	• **Medication**
• **Intubation**		

PRINCIPLES OF SUCCESSFUL RESUSCITATION

1. Ready availability of personnel/team
2. Coordinated effort by team
3. Resuscitation tailored to the patients need (Evaluation - Action - Decision cycle)
4. Availability of functioning equipments.

Remember that the delayed and ineffective resuscitation may increase chances for brain damage and make subsequent resuscitation more difficult.

SECTION B - INITIAL STEPS IN RESUSCITATION

The initial steps include :

1. Prevention of heat loss
2. Make airway open
3. Initiate breathing
4. Evaluation of infant

Prevention of heat loss : The baby after delivery should be quickly dried with a pre warmed towel and the wet cloth should then be removed immediately. The baby should be placed under pre-heated radiant warmer (allows proper visualization of the infant as well) Even healthy term infants have limited ability to generate heat during the first 12 hours of life and this is further aggravated in an asphyxiated baby, increasing their oxygen demand.

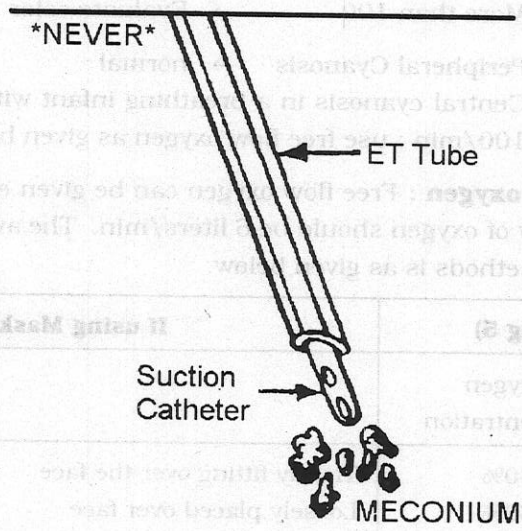
Opening Airway : Includes proper positioning and suctioning of the infant.

Position : The infant should be placed on the back (or side) with slight Trendelenberg position and the neck slightly extended. The extension of neck can be achieved by keeping a rolled up towel (3/4 to 1") under the shoulder or infant. This

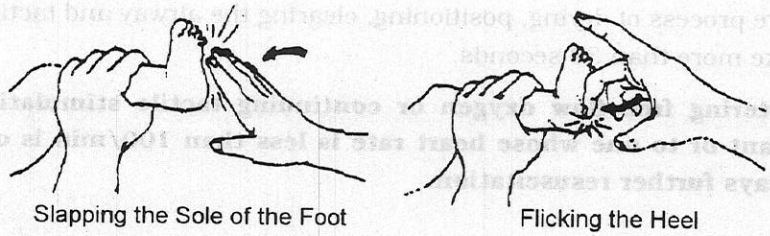
position helps in keeping the airway open. When the head is turned to one side, the secretions collect in the mouth rather than pharynx.

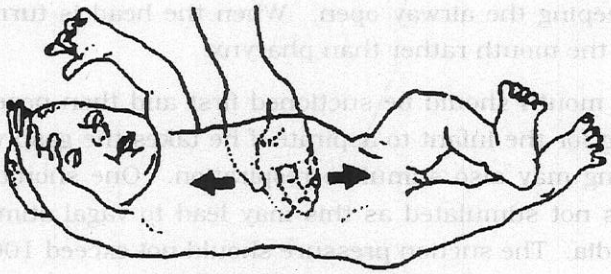
Suction : The mouth should be suctioned first and then nose. This makes sure that there is nothing for the infant to aspirate if he takes the gasp while suctioning the nose. The suctioning may also stimulate respiration. One should take care that the posterior pharynx is not stimulated as this may lead to vagal stimulation resulting in apnea and bradycardia. The suction pressure should not exceed 100 mmHg.

When there is thin meconium staining of liquor, no special precaution is necessary. However if the liquor is thickly stained with meconium, then the baby's oropharynx and hypopharyx should be suctioned as soon as the head is delivered. After delivery of the whole baby, the trachea should be intubated and meconium aspirated through endotracheal tube. Never suck the meconium from the trachea by passing a catheter through endotracheal tube (Fig. 2).



Initiation of breathing : The safe method for providing tactile stimulation is either by slapping or flicking the sole twice (Fig. 3) or by rubbing the back of the baby (Fig. 4). The tactile stimulation should not be done more than twice because continued stimulation will only further delay the initiation of breathing.





Rubbing the Infant's Back

Evaluation of the infant

Respiration	–	If no breathing after stimulation	→	ventilate with bag & mask if child is breathing then evaluate heart rate.
Heart rate	–	Less than 100	→	Ventilate with bag and mask
		More than 100	→	Evaluate color
Colour	–	Peripheral Cyanosis	→	normal
	–	Central cyanosis in a breathing infant with heart rate more than 100/min : use free flow oxygen as given below :		

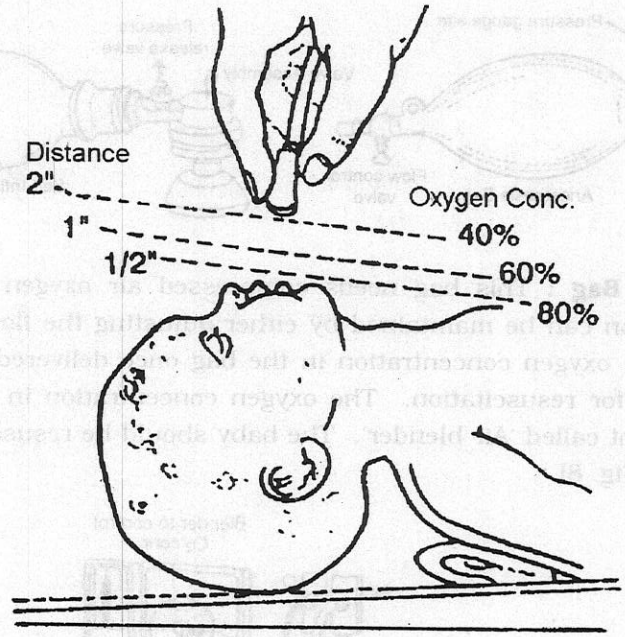
Use of Free flow oxygen : Free flow oxygen can be given either by using a oxygen mask or tube. The flow of oxygen should be 6 liters/min. The available concentration of oxygen with different methods is as given below.

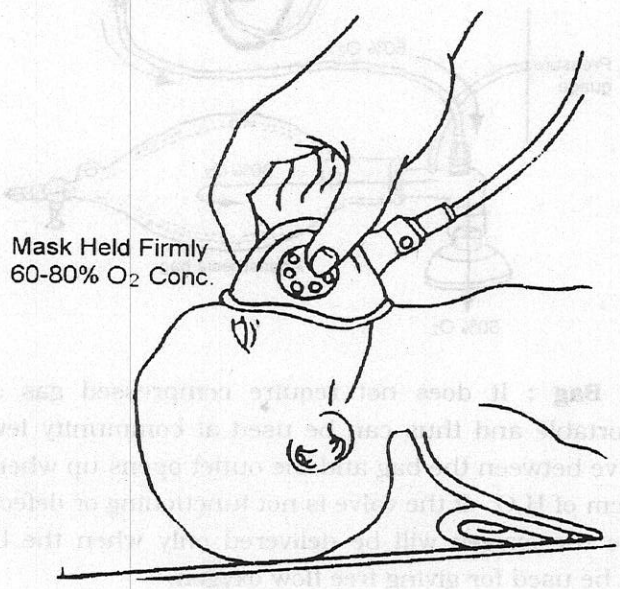
If using tube (Fig 5)		**If using Mask (Fig 6)**	
Distance from Nose	Oxygen Concentration		Oxygen Concentration
½"	80%	Tightly fitting over the face	60-80%
1"	60%	Loosely placed over face	40%
2"	40%		

Once the infant is pink, the oxygen should gradually be withdrawn (80% - 60% - 40% - Room air). The central cyanosis could also be due to congenital heart disease or diaphragmatic hernia.

The entire process of drying, positioning, clearing the airway and tactile stimulation should not take more than 30 seconds.

Administering free flow oxygen or continuing tactile stimulation to a non breathing infant or to one whose heart rate is less than 100/min is of little or no value and delays further resuscitation.

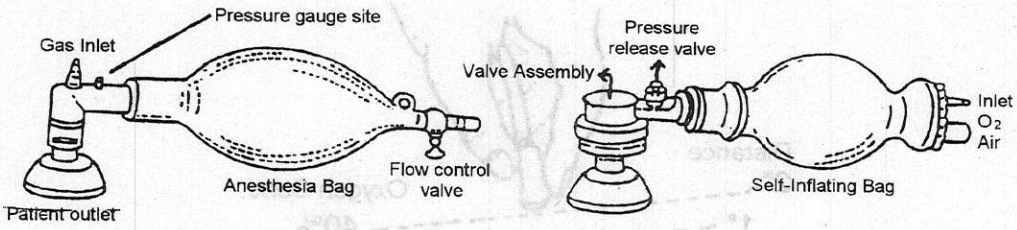




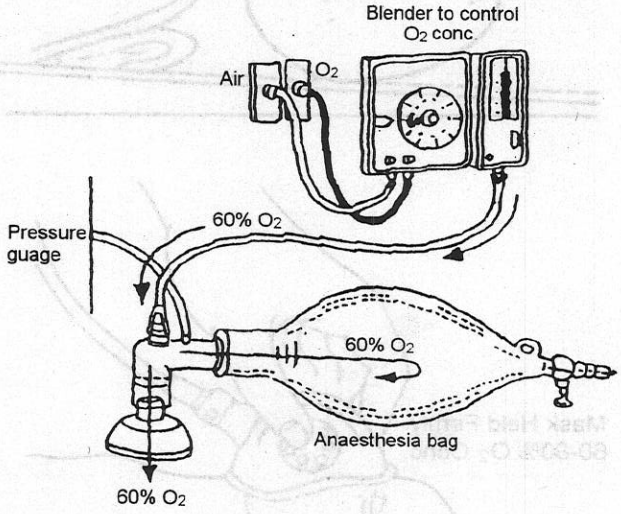
SECTION C

USE OF BAG AND MASK EQUIPMENT

There are two types of bags viz anaesthesia bag and self inflating bag (Fig. 7).



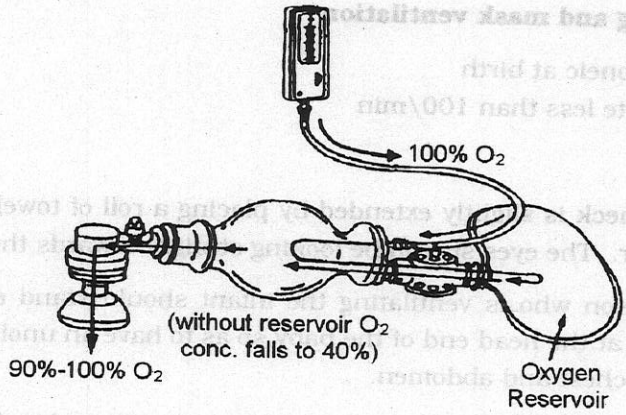
Anaesthesia Bag : This bag needs compressed air oxygen for inflation. The appropriate inflation can be maintained by either adjusting the flow meter or the flow control valve. The oxygen concentration in the bag once delivered is not diluted and available as such for resuscitation. The oxygen concentration in the bag can varied using an equipment called 'Air blender'. The baby should be resuscitated at birth with 90-100% oxygen (Fig. 8).



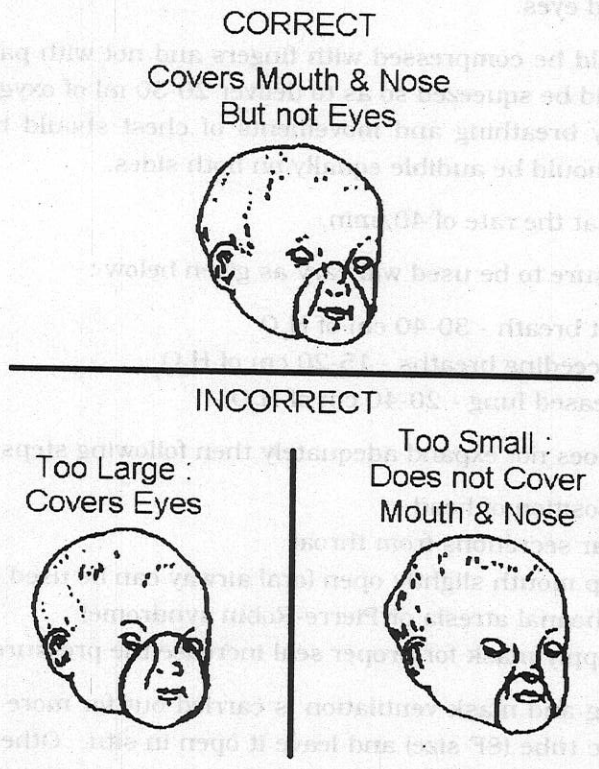
Self Inflating Bag : It does not require compressed gas source in order to fill/inflate and is portable and thus can be used at community level by trained birth attendants. The valve between the bag and the outlet opens up when the bag is pressed at a pressure of 35 cm of H_2O. If the valve is not functioning or defective, the bag should not be used. Since the oxygen will be delivered only when the bag is pressed, self inflating bag cannot be used for giving free flow oxygen.

When 100% oxygen with a flow rate of 6 lit/min is connected at the oxygen inlet, the bag delivers only 40% oxygen. In order to achieve 90 - 100% oxygen, air reservoir should be connected at the air inlet (Fig. 9).

THE PRESSURE GAUZE AND PRESSURE RELEASE VALVE ARE THE SAFETY DEVICES IN A SELF INFLATING BAG.



The resuscitation Masks can be cushioned or noncushioned and in round or anatomical shape. It is better to use a cushioned mask as it provides better air seal with less trauma to the baby's the face. The correct size mask when placed over the baby's face will cover chin, mouth and nose but not the eyes (Fig. 10).



The tidal volume of newborn varies from 22-30 ml (6-8 ml/kg). The bag used for the neonatal resuscitation should not have capacity larger than 750 ml (preferably only 250 ml).

Indications for bag and mask ventilation

1. Infant apneic at birth
2. Heart rate less than 100/min

Procedure

(a) Baby's neck is slightly extended by placing a roll of towel 3/4 - 1" under the shoulder. The eyes should be looking straight towards the roof.

(b) The person who is ventilating the infant should stand either on one of the sides or at the head end of the baby so as to have an unobstructed view of the infant's chest and abdomen.

(c) If you are right handed ventilate with your right hand and vice versa.

(d) The mask should cover the nose, mouth and chin but not the eyes.

(e) Mask is applied with thumb and Index/third finger of other hand. The ring finger holds the chin. (Don't Jam the mask over the face or Press on the throat and eyes.

(f) Bag should be compressed with fingers and not with palm. Only part of the bag should be squeezed so as to deliver 20-30 ml of oxygen/air. Baby should have easy breathing and movements of chest should be observed. Breath sounds should be audible equally on both sides.

(g) Ventilate at the rate of 40/min.

(h) The pressure to be used will vary as given below :

- First breath - 30-40 cm of H_2O
- Succeeding breaths - 15-20 cm of H_2O
- Diseased lung - 20-40 cm of H_2O

(i) If chest does not expand adequately then following steps be taken :

- Reposition of head
- Clear secretions from throat
- Keep mouth slightly open (oral airway can be used especially when there is choanal atresia or Pierre-Robin syndrome)
- Reapply mask for proper seal increase the pressure to 20-40 cm of H_2O

(j) When bag and mask ventilation is carried out for more than 2 min., pass on orogastric tube (8F size) and leave it open in situ. Otherwise the air entering the stomach will distend the abdomen and cause pressure on the diaphragm or may lead to regurgitation of stomach contents.

SECTION D

Chest compression (External cardiac massage)

When there is hypoxia, heart rate and myocardial contractions are reduced. This in turn reduces the blood flow and oxygen supply to the tissues. During the chest compression, heart is compressed against the vertebrae, hence blood supply to the vital organs is improved.

Indication for chest compression

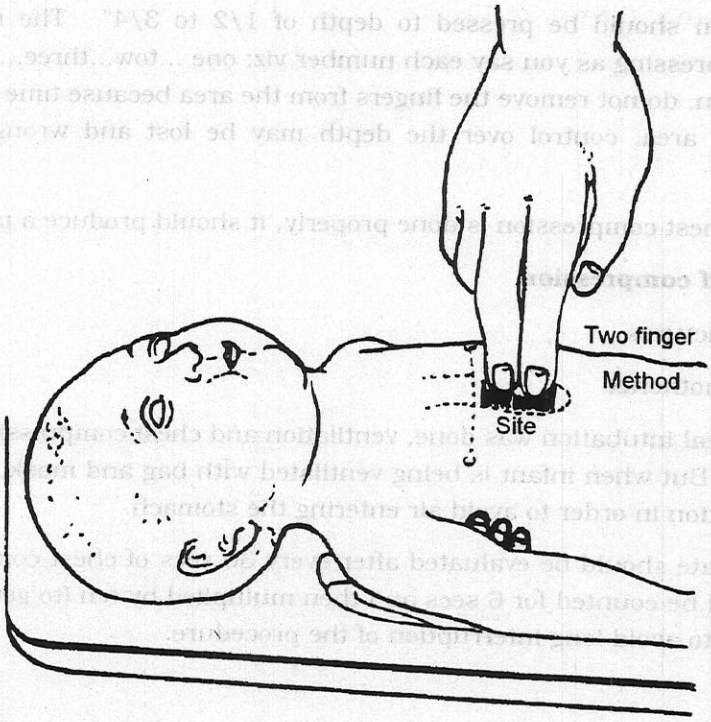
- Heart rate less than 60/min
- Heart rate 60-80/min and not increasing

The decision should be based on the heart rate after 15-30 seconds of ventilation with 100% oxygen and not the heart rate at the time of birth. Chest compression should always be accompanied by ventilation with 100% oxygen.

There are two techniques of chest compression

(a) Thumb method
(b) Two finger method

The pressure is applied to the lower third of the sternum just below the imaginary line joining the two nipples (Fig. 11).



Precaution should be taken not to press the xiphoid process as in newborn this is curved inwards and may cause a tear in the liver if pressed hard. There should not be any pressure on the other parts of the chest wall since it may result in fracture of ribs or even pneumothorax.

Two finger technique

The tips of the middle finger and either the index or ring finger of one hand are used for pressing the designated area and the other used to support the back of infant. It is easier to use the right hand for pressing if you are right handed and vice versa. If you have long nails, you should use the thumb method for avoiding injury to the skin of infant. This method is more tiring if used for long time.

Thumb method

This is accomplished by encircling the thorax with both hands and placing the thumbs on the sternum and the fingers under the infant. The thumbs can be placed side by side or one over the other in a small infant. The thumbs will compress the designated area on sternum while the fingers support the back. Care should be taken not to press the ribs.

The thumb technique cannot be used in a large infant or when the hands of the operator are small. It also makes the access to the umbilicus difficult. But the technique is less tiresome than the two finger method when used for longer time.

The sternum should be pressed to depth of 1/2 to 3/4". The rate should be 120/min. Keep pressing as you say each number viz: one ...tow...three...". While giving chest compression, do not remove the fingers from the area because time may be wasted in relocating the area, control over the depth may be lost and wrong area may be compressed.

When the chest compression is done properly, it should produce a pulse.

Complications of compression

1. Rib fractures
2. Pneumothorax

If endotacheal intubation was done, ventilation and chest compression can be done simultaneously. But when infant is being ventilated with bag and mask, it is preferable to have interposition in order to avoid air entering the stomach.

The heart rate should be evaluated after every 30 secs of chest compression. The heart rate should be counted for 6 secs and then multiplied by ten (to get Heart rate per minute) in order to avoid long interruption of the procedure.

6 sec. Heart rate count	1 min Heart rate count
4	40
6	60
8	80

Proceed further based on response as assessed by heart rate	
Heart rate	
> 80/min	< 80/min
• Discontinue compression • Continue ventilation till heart rate is > 100/min and the infant is breathing	• Continue chest compression • Continue ventilation with 100% oxygen • Check heart rate periodically every 30 seconds

SECTION E

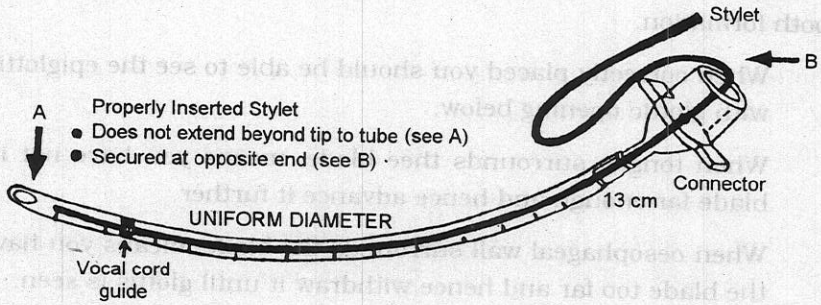
Endotracheal intubation

It is one of the most difficult skill to maintain in "neonatal resuscitation".

Indications for intubation

1. Need for prolonged ventilation
2. Bag and mask ventilation is ineffective
3. Suspected diaphragmatic hernia (scaphoid abdomen)
4. Tracheal suctioning in case of thick meconium staining of amniotic fluid

The equipments used for intubation should be sterile. Spare bulbs and batteries for laryngoscope should always be available. The blade should preferably be of straight type (size - 1 for term babies and size - O for preterms).



The endotracheal tubes should have uniform diameter and preferably have vocal cord guides (Fig. 12). The vocal cord guide helps in positioning the tubes since the tracheal length varies from 3 cms in preterm babies to 5-6 cms in full term neonates. The endotracheal tube should have a final length of 13 cms.

Based on the size of the tube the vocal cord guide marking also varies

Size of the tube	2.5 mm	3 mm	3.5 mm	4 mm
Distance of the mark from top of the tube	2.2 cm	2.4 cm	2.6 cm	2.8 cm

The size of the tube to be used will vary depending on the weight/Gestation

Birth Weight (kg)	Gestational age in weeks	Tube size (ID in mm)
< 1	< 28	2.5
1-2	28-34	3.0
2-3	34-38	3.5
> 3	>38	4.0

Procedure

1. Place the infant flat with slight extension of the neck and head in the midline. If the neck is hyper-extended, trachea will be lifted and when underextended trachea cannot be visualized.
2. The operator stands at the head end of the baby with the laryngoscope in his left hand. The laryngoscope should be held in the left hand since the illumination is on the right side.
3. Stabilize the head with your right hand.
4. Slide the laryngoscope blade over the tongue till the tip rests in the vallecula (area between the base of the tongue and epiglottis).
5. Lift the entire blade by pulling the laryngoscope in the direction of the handle. If only the tip is lifted then excessive pressure on the alveolar ridge will harm tooth formation.
   - When correctly placed you should be able to see the epiglottis at the top with glottic opening below.
   - When tongue surrounds thee blade, means you have not inserted the blade far enough and hence advance it further.
   - When oesophageal wall surrounds the blade, means you have advanced the blade too far and hence withdraw it until glottis is seen.

- When part of the trachea is to the side, you should move the blade to midline.
- If you are not able to visualise the vocal cords then remove the laryngoscope, ventilate the infant with bag and mask and try again. In some infants, slight pressure on the trachea will lower it and make glottis visible.

6. Once you are able to visualise the glottis and vocal cords, hold the tube in your right hand and insert it until the vocal cord guide is at the level of the cords. At this point the tip of the tube will be between the carina and the vocal cords and thus the risk of tip being in one of the bronchus is avoided.
7. Hold the tube firmly and remove the laryngoscope blade. If stylet is used, then it should also be removed.
8. Confirm the position of the tube. When the tube is properly placed ventilation should cause a rise of chest without gastric distension.
9. The air entry should be checked at the level of nipples and epigastrium. The breath sounds will be of equal intensity on both sides and there will be no air entering the stomach. After this, the mark at the outer end of the endotracheal tube at the lips to be noted and then secure the tube with adhesive tape. The length of the tube outside from lips should be about 4 cms.

If the breath sounds are heard unilaterally without air entering the stomach, the tube is in the main stem bronchus of that side and needs to be withdrawn by about 1 cm.

When the tube is in the oesophagus, you will hear no breath sounds but air entering the stomach will be heard at the epigastrium. The tube should be removed and baby should be reintubated after ventilating with bag and mask.

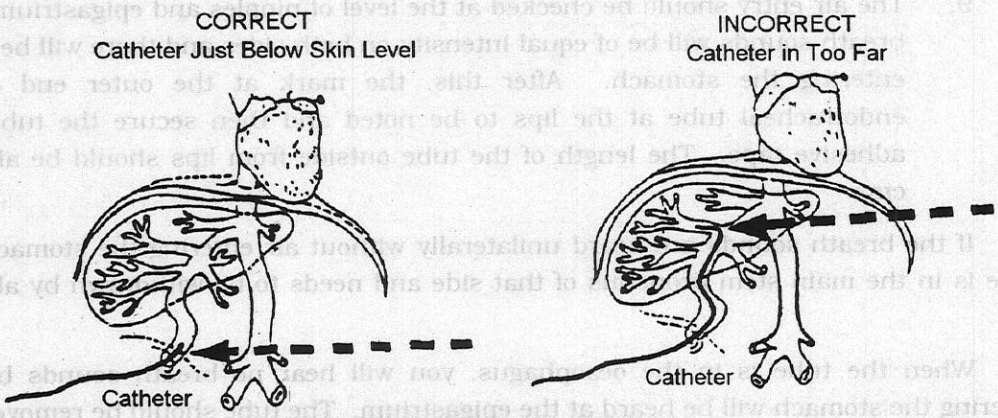
Complications of the procedure

1. Hypoxia caused by the long time taken for intubation or incorrect placement of the tube. Single attempt should not exceed 20 seconds and if it exceeds 20 seconds give bag & mask ventilation before giving second try.
2. Bradycardia/apnea due to hypoxia or vagal response.
3. Pneumothorax - due to overventilation of one lung (Usually right)
4. Contusion/laceration of the tongue, gum or pharynx due to rough handling.
5. Perforation of trachea or oesophagus may occur when stylet goes beyond the tube and hence the free end of the stylet should be well secured.
6. Infection may result from unsterilised equipment.

SECTION F

Medications

Medications may be needed for neonates who do not respond to adequate ventilation with 100% oxygen and chest compression for minimum of 30 seconds (Heart rate Zero or below 80/min). The number of medications needed is determined by the infant's condition. The route of administration could be the umbilical vein, peripheral vein, or intratracheal instillation. Umbilical vein is preferred because of it's easy accessibility. The catheter should be just below the skin level (Fig. 13), but there should be free flow of blood. If the catheter goes deep, the drugs may be infused in liver and possibly cause some damage. The catheter should be removed after resuscitation. In intratracheal route a fine catheter or number 5 feeding tube is passed through the endotracheal tube for intratracheal instillation of drugs. 0.5 ml of normal saline should be used to flush the drug adhered in feeding tube. In this route the administration of drug should always be followed by positive pressure ventilation to distribute the drug deep in bronchial tree.



Umbilical vein catheter placement

The drugs and volume expanders are administered during a resuscitation procedure to STIMULATE HEART, INCREASE TISSUE PERFUSION AND RESTORE ACID BASE BALANCE.

While calculating the dosage, the infants' weight should be rounded off to the nearest tenth of a kilogram. ATROPINE AND CALCIUM HAVE NO ROLE IN ACUTE RESUSCITATION.

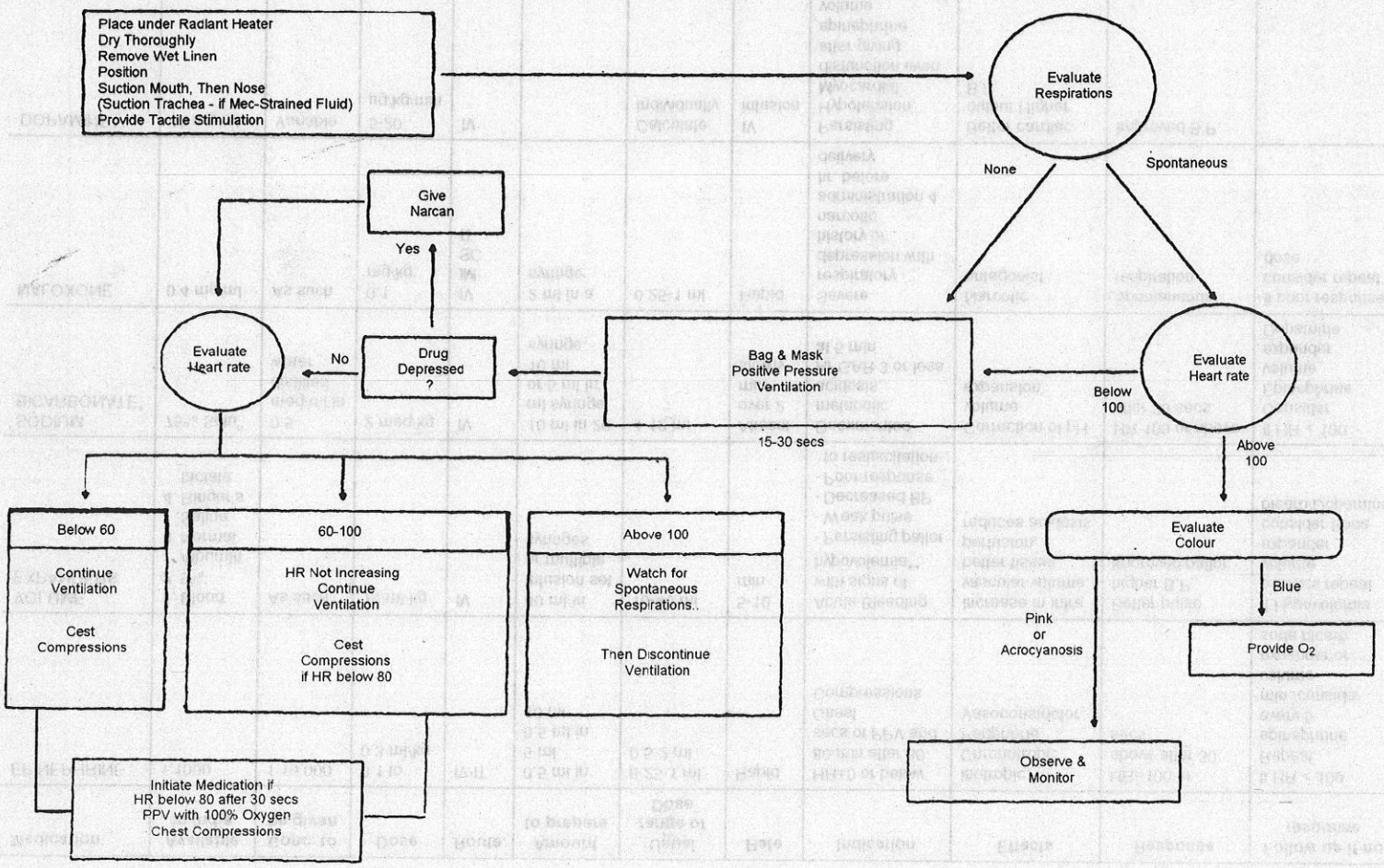
Following table gives all the details about various drug used in neonatal resuscitation :

Medication	Available in India	Conc. to be given	Dose	Route	Amount to prepare	Usual range of Dose	Rate	Indication	Effects	Response	Follow up if no response
EPINEPHRINE	1:1000	1:10,000	0.1 to 0.3 ml/kg	IV/IT	0.5 ml in 5 ml 0.5 ml in 10 ml	0.25-1 ml 0.5-2 ml	Rapid	HR=0 or below 80/min after 30 secs of PPV and Chest Compressions	Inotropic, Chronotropic Peripheral Vasoconstrictor	HR=100 or above after 30 secs	If HR < 100 Repeat epinephrine every 5 min./consider volume expander or soda bicarb
VOLUME EXPANDERS	1. Blood 2. 5% Albumin 3. Normal Saline 4. Ringer's lactate	As such	10 ml/kg	IV	40 ml in infusion set or multiple syringes	10-40 ml	5-10 min	Acute Bleeding with signs of hypovolemia** - Persisting pallor - Weak pulse - Decreased BP - Poor response to resuscitation	Increase in intra vascular volume, better tissue perfusion, reduces acidosis	Better pulse higher B.P. improved pallor	If Hypovolemia persists repeat volume expander consider Soda bicarb/Dopamine
SODIUM BICARBONATE#	75% Solu^n	0.5 meq/ml in distilled water	2 meq/kg	IV	10 ml in 20 ml syringe or 5 ml in 10 ml syringe	4-12 ml	Atleast over 2 min slowly	Documented metabolic acidosis, APGAR 3 or less at 5 min.	Correction of pH volume expansion	HR 100 or above after 30 secs.	If HR < 100 Consider Epinephrine volume expander Dopamine
NALOXONE	0.4 mg/ml	As such	0.1 mg/kg	IV IM SC IT	2 ml in a syringe	0.25-1 ml	Rapid	Severe respiratory depression with history of narcotic administration 4 hr. before delivery	Narcotic antagonist	Spontaneous respiration	If poor response consider repeat dose
DOPAMINE	40 mg/ml	Variable	5-20 µg/kg/min	IV		Calculate individually	IV infusion	Persisting Hypotension, Myocardial disfunction even after giving epinephrine volume expanders and soda bicarb	Better cardiac output Higher B.P.	Improved B.P.	

IV – Intra Venous
IM – Intra Muscular
IT – Intra Tracheal
SC - Subcutaneous

* Concentration of dopamine mg/100 ml = 6 x wt (kg) x Dose required (µg/kg/min)/desired fluid ml/hr.
** Appear when blood loss in more than 20% (Estimation of Hemoglobin or hematocrit may be misleading in acute blood loss.
# Ventilation must preceed and accompany soda bicarb administration. Recommended dilution minimizes risk of intra ventricular hemorrhage. Use discouraged during brief periods of arrest.

Overview of Resuscitation in the Delivery Room



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Hypoxic Ischemic Encephalopathy

O.P. MISHRA*, ASHOK CHAUDHARY* and B.D. BHATIA**

Hypoxic ischemic encephalopathy (HIE) refers to a clinical state of cerebral dysfunction which occurs following hypoxic and/or ischemic insult to the brain (90% intrauterine, 10% postnatal). It is the most important consequence of birth asphyxia. HIE is a leading cause of neonatal morbidity and mortality and survivors may be left with significant neurological handicaps in later life. Besides brain, other target organs of asphyxial injury are the kidney, heart, lung, gut and liver.

Pathogenesis : Most of the asphyxial insult leading to HIE occurs before birth. In the presence of hypoxic ischemic insult to the fetus, reflexes are initiated, causing shunting of blood to the brain, heart and adrenals and away from lungs, gut, kidneys, liver, spleen, skeletal muscles, and skin (diving reflex). Brief hypoxia impairs cerebral oxidative metabolism leading to an increase in lactate, fall in pH and decrease in ATP. Acidosis results in myocardial depression and decreased cardiac output. During prolonged hypoxia, hypotension occurs and cerebral blood flow is compromised and a combined hyposic/ischemic insult produces further failure of oxidative phosphorylation. Such energy failure impairs ion pumps (Na^+-K^+ ATP ase) with accumulation of Na^+, Cl^-, H_2O and Ca^{++} intracellularly and K^+ and neurotoxic excitatory amino acids (glutamate and aspartate) extracellularly. These biochemical abnormalities result in neuronal death. Reperfusion of previously ischemic tissue promotes formation of oxygen free radicals which produce further neuronal damage.

Clinical features : Depending upon the severity of asphyxial injury, the clinical features of HIE range from mild to severe. The signs of cerebral dysfunction include stupor or coma, irregular respiration, decreased muscle tone, diminished tendon reflexes, loss of neonatal reflexes (Moro, suck etc), full anterior fontanelle and other evidence of brain stem dysfunction (apnea, abnormal pupillary responses etc.). Seizures occur 6 to 24 hours after the insult in 50% of moderate to severely asphyxiate infants. In severe HIE features of cerebral dysfunction progress over 24 to 72 hours. The severity of HIE is estimated by Sarnat clinical staging as given in Table.

In severe HIE usually there is evidence of other organ dysfunction viz oliguria (kidney), cardiogenic sock (heart), respiratory distress (lungs), disseminated intravascular coagulation (blood) and necrotizing enterocolitis (gut).

Diagnosis : A newborn infant with an evidence of cerebral dysfunction (mentioned above) in the presence of low Apgar scores (6 or less at 1 and/or 5 minutes) is considered to have HIE. The presence of fetal distress (fetal bradycardia, loss of beat to beat

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variability of fetal heart, reduced or absent fetal movements, meconium stained liquor, and fetal acidemia) and need for resuscitation at birth are important clues to diagnosis.

Sarnat Stages of HIE

	Stage I (Mild)	Stage II (Moderate)	Stage III (Severe)
1. Consciousness	Irritable	Lethargic	Comatose
2. Muscle tone	Normal	Mild hypotonia	Flaccid
3. Moro reflex	Normal	Weak	Absent
4. Suck reflex	Weak	Weak or absent	Absent
5. Seizures	None	Common	Uncommon
6. EEG	Normal	Abnormal	Abnormal
7. Duration of symptoms	<24h	21-14d	Hours to weeks
8. Outcome	Almost 100% normal	80% normal	50% die, most of the survivors with sequelae

Investigations : Following investigations are helpful in identifying the sites and extent of damage and in documenting metabolic abnormalities that accompany HIE.

- Blood glucose, calcium, sodium, potassium, urea & creatinine,
- Arterial blood gases : pH, pO_2, pCO_2, HCO_3 base deficit
- Chest x-ray if there is any evidence of respiratory distress.
- ECG & ECHO in case of myocardial ischemia.
- CSF examination (generally not required)
- Coagulogram if there is evidence of DIC
- Cranal CT : Cranial CT is useful in assessing the degree of edema and extent of brain injury. There is a correlation between areas of hypodensity on CT and later neurologic sequence. CT is less valuable in pretern infants to predict later outcome. CT is also useful for detecting intracranial hemorrhage, hydrocephalus, cerebral dysgenesis and malformation.
- Cranal USG : Detects intracranial hemorrhage, brain malformations extent of edema (Midline shift & Ventricular compression). Adv : Can be carried out on

sick child at beside, repeated examinations are possible and there is no radiation exposure.

- EEG : Is helpful identifying seizures activity and has also role in predicting future outcome. Term asphyxiated infants with normal EEG after seizure have more than 80% chance of normal development. Burst suppression, low voltage or electro cerebral inactivity are associated with poor outcome.

Management : The management of HIE is essentially supportive. The infant is shifted to a neonatal intensive care unit (NICU) and monitoring of vital signs is done. Following are essential for management :

1. **Temperature** : Baby should be kept in a thermoneutral environment (body temperature to be maintained at 36.5°C). Avoid hyperthermia as it also increases blood flow to the brain causing brain edema. Hypothermia/ Hyperthermia are associated with increase in oxygen requirement.

2. **Oxygen** : Maintain between 50 and 80 mm Hg. Treat hypoxia with oxygen and/or ventilation. Avoid hyperoxia since it may decrease cerebral blood flow or exacerbate free radical damage. Minimum handling is advised as crying, feeding, bowel movements, procedures, noise all are associated with fall in PO_2. Hypercapnia is avoided as it can cause tissue acidosis, focal cerebral ischemia and increase in cerebral blood flow and hemorrhage.

3. **Fluids** : Restricted intravenous fluids (70% of normal maintenance requirement) are given for first 3-4 days because there is inappropriate ADH secretion and the risk of cerebral edema. Begin with 10% Dextrose and add Na^+ and K^+ after 48 hours. Monitor BP and CVP to avoid hypotension and fluid overload. Dopamine infusion started if there is evidence of hypotension. Large volume infusions can cause intracranial hemorrhage.

4. **Glucose** : Blood glucose is maintained between 75 and 100 mg/dl. Both hypoglycemia and hyperglycemia may produce brain damage. Regular monitoring of blood glucose by Dextrostix is essential.

5. **Acid base balance** : To detect any acid-base disturbance, arterial blood gas (ABG) monitoring is recommended. Avoid rapid infusions of sodium bicarbonate because it can produce intracranial hemorrhage, especially in preterm infant.

6. **Seizures** : It is of utmost importance to control seizures in asphyxiated neonates because they further potentiate brain damage. Many of the metabolic abnormalities which accompany HIE may themselves produce seizures. For effective seizure control underlying metabolic abnormalities (hypoglycemia, hypocalcemia) should be corrected. Use I.V. diazepam (0.3

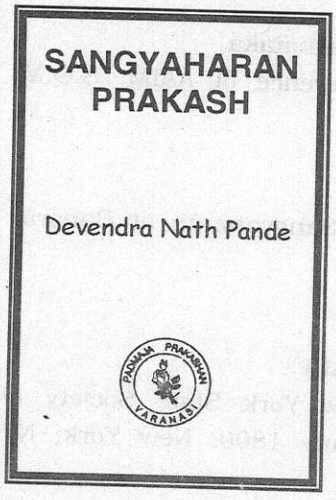
mg/kg/dose) to stop seizure. Second dose of diazepam can be repeated after 10 minutes if seizures are not controlled. Avoid further doses because it may cause respiratory depression. Long acting anticonvulsants (phenobarbitone or phenytoin) are required even if seizures are controlled with diazepam. Avoid combined use of diazepam and phenobarbitone since both may cause respiratory depression.

Drug	Starting dose	Repeat dose	Maintenance dose
Phenobarbitone maximum loading dose 30-40 mg/kg with monitoring of B.P. and respiration	20 mg/kg I.V. over 5-10 min. or 25 mg/kg I.M. (Blood level 20 µg/ml)	10 mg/kg after 15 min. to 1 hr. if convulsions not controlled	3-4 mg/kg per day in 2 divided doses at 12 hourly interval (I.V. or I.M. or Oral)
Phenytoin indication: • nor response to Phenobarbitone • Monitoring of consciousness more critical	20 mg/kg I.V. at rate of 0.5-1.0 mg/kg per min. (Blood level 15 µg/ml)		5 mg/kg per day I.V. (Never I.M.) Oral absorption not reliable

Cerebral edema : It is potentially a lite threatening complication of HIE. Treatment consists of fluid restriction (two thirds of maintenance), elevation of head end to 30°, and use of drugs (20% mannitol 5 ml/kg/dose I/V over 20 min every 6 hours and/or frusemide 1-4 mg/kg/day in 2 or 3 doses). Dexamethasone and phenobarbitone are ineffective in cerebral edema. Avoid hypoxia, hypercarbia and hyperthermia since they further increase cerebral edema.

Outcome : Mortality rate is 10-20%. Neurologic sequelae are found in 20-40% of survivors of severe HIE. Various sequelae include cerebral palsy, mental retardation, epilepsy, microcephaly, and auditory, visual-spatial or language deficits. Babies with persistent seizures, abnormal EEG, CT scan with evidence of intraventricular or parenchymal hemorrhage and infarction in neonatal period carry bad prognosis for mortality and later neurological handicaps.

BOOK REVIEW



Sangyaharan Prakash

By

Dr. Devendra Nath Pande

Book for undergraduate of Ayurveda and Postgraduates of Sangyaharan.

The book is available at:

Padmaja Prakashan
Ganeshpuri Colony
Susuwahi
Varanasi - 221 005.

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It is an excellent and handy guide book on 'Anaesthesia - Sangyaharan'. Till date no book is available on this subject by any Ayurvedic Scholar. I do strongly recommend it to readers of medicine, specialists of anaesthesiology, all the undergraduate students of Ayurveda and postgraduates of surgical specialities like - Shalya Shalakya and Prasuti Tantra for useful informations and references.

Prof. D.P. Puranik
Head, Department of Sangyaharan
Tilak Ayurved College, Pune

Release of a Book **'Sangyaharan Prakash'** written by Dr. D.N. Pande by Prof. P.H. Kulkarni

THE NEWS

25-26 November, 2000 **Karnataka**

- 4th National Conference of AAIM, Kuthpandi, Udupi, Karnataka
- ***Contact:*** Organising Secretary, IVth National Conference of AAIM, S.G.M. Ayurvedic College, Udupi, Karnataka-576101

1-28 December, 2000 **Varanasi (India)**

- IIIrd Reorientation Course in Shalya-Shalakya and Sangyaharan at Banaras Hindu University, Varanasi-221005.

9-13 December, 2000 **New York (USA)**

- 54th Postgraduate Assembly in Anaesthesiology (PGASU)
- ***Contact:*** Kurt G Becker, Executive Director, New York State Society of Anaesthesiologists, Inc, 360, Lexington Avenue, Suite 1800. New York, NY 10017, USA, E-mail: Kurt@nyssa-pga.org

03-07 January, 2001 **Calcutta (India)**

- 88th Indian Science Congress on 'Food Nutrition & Environmental Security'
- ***Contact:*** General Secretary, Indian Science Congress Association, 24, Dr. Biresh Guha Street, Calcutta-700017

11-13 February, 2001 **Guwahati (India)**

- Regional International Meet on Pain management XVIth National Conference of Indian Society of Pain, Guwahati
- ***Contact:*** Secretariat, Pain clinic of North East India, Opp. Bank of Baroda, G.S. Road, Bhangagarh, Guwahati-781005, India, E-mail: issp2001@usa.net, Fax : 0361-511927.

2-4 February, 2001 **Bhopal (India)**

- VIII International Conference of IAPC on Palliative care.
- ***Contact:*** Imami gate, Bhopal-462001 (India), Fax : 091-755-531615: E-mail : ppcbpimp@bom6vsnl.net.in

6 February 2001 **Varanasi (India)**

- Sangyaharan Day Celebration and Three Workshops (15 days each with 5 delegates in each batch) on C.C.P.R.
- **06-21 February 2001; 23 February-9 March 2001 and 11-26 March 2001**
- ***Contact :*** Section of Sangyaharan, Department of Shalya-Shalakya, Faculty of Ayurveda, Institue of Medical Sciences, Banaras Hindu University, Varanasi - 221 005.

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