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BHARATIYA SANGYAHARAK ASSOCIATION

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Sangyaharan Shodh has been registered and assigned ISSN no.2278-8166.Now Journal is indexed in Index Copernicus. Sangyaharan Shodh (ISSN ISSN 2278) was positively evaluated in I C Journals Master List 2012, which resulted in score given ICV 4.32 points (Index Copernicus Value). This is a recommendable achievement of our Editorial Board.

Our Association organized it`s 16th National Conference at the Department of Sangyaharan, I.M.S., B.H.U., Varanasi on 17-19th January 2014 at the occasion of celebration of Foudation Day of Department of Sangyaharan.

The august gathering discussed about the need of Integration of Ayurved with other system of medicine.A resolution was made to send to the Government of India as well as to the state Governments to proceed for Act Amendment so that integration of different system of medicine can be implemented in every state and can be practiced by practitioners of each system of medicine. It will be only possible when a new course curriculam will be framed for every system. I appeal to all the Academician, Politician, legistrators, Parliamentarians and authorities to pave the way so that not only our country but world population can be benifitted with this most useful Integrated system of medicine incorporating all the treasures of different systems e.g.AYUSH.

Congratulations to all the A.A.I.M. members for this Golden Resolution. We hope for a great revolution and great achievements for human being.

JAI HIND JAI SANGYAHARAN JAY AYURVED

Devendra Nath Pande,

Chief Editor, Professor & Head, Deptt. of Sangyaharan,

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Blood Transfusion and Arrhythmia in Intra Operative Period with Sacrococcygeal Teratoma-A Case Report

*Singh Ram Badan **Rahul ***Pandey Vaibhav

Abstract: Sacrococcygealteratomas (SCTs) in neonates are commoncongenital tumorswhich develops early in fetal life. Surgical excision of thetumoralong with coccyx is the treatment of choice [1] which is performed under general anaesthesia in prone position. Excessive blood loss during resection requires rapid blood and fluid replacement to maintain normal hemodynamic parameters and urine output.Complications inintra operative period affects the post operative outcome. Electrolyte imbalance is the most common complication of rapid and massive fluid transfusion [2,3].We report a case of neonate who experienced arrhythmia in immediate post operative period after turning to supine position and rapid blood transfusion.

Keywords: Sacrococcygeal Teratoma, excision, hyperkalemia.

Introduction-SCTs are a relatively common congenital neoplasm in neonates which occurs in one out of 35000 to 40000 live birth, more common in females having female to male ratio of 3-4 :1[1,4]. Some time these tumors are associated with other congenital anamolies which increases morbidity and mortality [].These are germ cell tumors, arise from primitive totipotential cells therefore contain cells at different stages of maturity [5]. They present in various shape and size and can differentiate in to any form, usually attached with coccyx and grow externally or internally in the pelvic.Here we are reporting a case of sacrococcygealteratoma in the form of well differentiated lower limbwhounderwent surgical excision under general anaesthesia in prone position and developed ventricular arrhythmia in immediate post operative period after fast blood transfusion which reverted successfully.

Case Report: A 20 days old 3.6kg female new bornby caesarean section at full term gestation having extra leg attached with sacral region was admitted in our hospital for surgical excision.After admission baby was examined properly for anaesthetic and surgical intervention. Her haemoglobin was 14.5 gm%, total leukocyte count 5000, platelet count $243x10^3/\mu l$, INR 1.06, serum sodium 132meq/dl, potassium 5.4meq/dl, chloride 97meq/l. LFT, X ray chest, ECG and USG abdomen were found normal .

Before induction of anaesthesia 2 venous lines were secured in both hands. Anaesthesia was induced with Thiopentone 12 mg, vecuronium 0.4mg and fentanyl 5 microgram. Airway was secured with 3.5 size endotracheal tube and anaesthesia was maintained with oxygen, nitrous oxide, isoflurane and 0.1mg vecuronium bromide intermittent as bolus dose. After positioning temperature was maintained between 35°C to 37°C using force warming device

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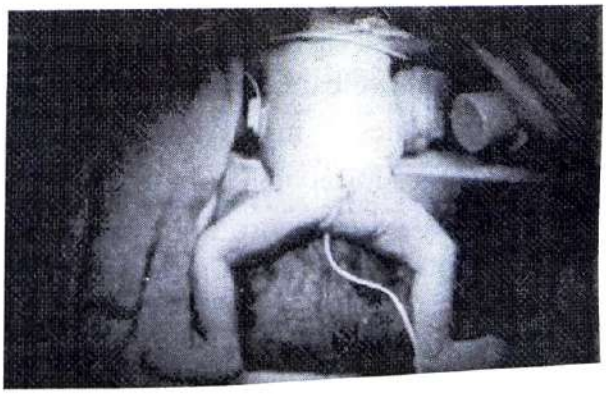
(Bayer hugger).ECG, Spo2, ETCo2, non invasive blood pressure, temperature and urine output monitoring were done. Surgery and blood transfusion was started simultaneously and 100 ml. (2bags each containing 50ml) blood was transfused during 2hour of surgery. At the end of surgery after making supine position pt was observed pale and hypovolumic, heart rate160/min, low volume pulse, urine 10ml, concentrated .Therefore 50 ml of more blood was transfused fast, while transfusion, patient developed ventricular arrhythmia which was reverted bythumps over precardium fallowed by 3 ml of calcium gluconate diluted in 5ml 5% dextrose slowly.The venous sample was send for blood gas analysis where high level of potassium was observed (table 1). The patient was treated with hyperventilation and 20ml 10% dextrose ,2unit insulin and 3ml calcium gluconate infused in 20 minutes. During2 hour of surgical procedure, patient received 150ml of blood, 100ml Ringer Lactate, 200ml Isolyte P and 20ml of 10% dextrose. Total urine output was 25ml up to 4 hour of post operative period. The patient was shifted in NICU on T peace and extubatedafter4 hour of monitoring in ICU.

Table 1. Venous blood gas analysis

Blood gas	Intra-operative	Post operative
PvO2(mmHg)	72	70.3
PvCo2(mmHg)	45.9	40.6
pH	7.308	7.37
Na (mmol/L)	125.9	130.6
K (mmol/L)	7.2	3.89
Cl (mmol/L)	93.0	97.1
iCa (mmol/L)	0.971	1.o61
Hct	30.7	40.1
BE (mmol/l)	-3.9	-3.5
Osm (mOsm/kg)	252.7	276.8

Fig 1

Fig 2



Discussion: Neonates with sacrococcygeal teratoma are at high risk of morbidity and mortality because they are prone to have cardiac failure and hydrops fetal is due to arteriovenous shunting through tumor [6]. Therefore they require careful anesthetic and surgical management. The mortality rate in new born with sacrococcygeal anomalies varies from 5 to 7% and in fetal SCT surgery more than 50%[7]. Surgical removal of SCT requires prone position and mechanical ventilation in prone position and maintenance of body temperature are difficult due to large exposed area. Complications related to SCT excision under general anaesthesia is mostly due to excessive blood loss, fluid and electrolyte imbalance [7]. Hyperkalemia and arrhythmia in intra operative period is either due to massive blood transfusion containing high level of potassium or manipulation of tumor during resection along with other abnormal blood gas parameters [7,8].Our patient developed ventricular arrhythmia after turning to supine position and rapid blood transfusion because in old stored blood the potassium level is usually higher due to extra cellular movement of potassium. The rapid transfusion of old blood may cause hyper kalemia and cardiac rhythm disturbances. In addition other contributing factors like respiratory and metabolic acidosis, hypothermia, hypoxemia and low hemoglobin level may contribute to abnormal cardiac rhythm. The pre operative assessment of these patients requires special attention for presence of other congenital cardiac and Oro-pharyngeal anomalieswhich prevent smooth induction and intubation. In intra operative period neonates are prone to devlop hypothermia which worsen to coagulopathy and prolong the effects of anaesthetic drugs [2].

Our experience with this particular intra operative incidence of ventricular arrhythmia after positioning and rapid blood transfusion was main reason of ventricular arrhythmia which was corrected immediately with pre cardial thumping andothr pharmacological drugs.The un recognized rhythm disturbances may lead to cardiac arrest [10]. Progressive tumor necrosis and lethal hyperkalemia in neonate can also occur during SCT excision [11]. Therefore replacement of excessive blood loss and measures to maintain electrolytes level during surgery should be started simultaneously.

The prognosis of SCT is excellent depending on the time of diagnosis, malignant potential of the tumor and ease of surgical resection. Prenatal diagnosis is of significance since early prenatal presentation is associated with high fetal morbidity and mortality and late presentation after 30 weeks of gestation is probably good prognostic indicator for fetal survival. The EXIT procedure could be undertaken when the diagnosis is made early in pregnancy.[2,3]

Our patient was delivered in a private hospital and referred to our hospital for surgical excision and further management which was born from un booked patient at 36 week of gestation.fig 1.with planning and all precautionary measures the extra limb was excised with coccyx and baby was discharged to home on 10^{th} day of surgery, even after immediate post operative complication of ventricular arrhythmia which was observed after fast blood transfusion.

Conclusion: The fast and massive blood transfusion in neonates often associated with immediate transfusion related complications which increase morbidity and mortality. (Electrolyte imbalance, cardiac arrhythmia and cardiac arrest).Therefore continuous blood loss assessment and simultaneous replacement should be done since beginning of operation to avoid such complications.

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Agnikarma Chikitsa: An introduction by way of possibility in treating various diseases

Kumar Mahesh* **Singh Lakshman****

Abstract – Ayurveda is a science of life which has active role in treating various diseases. Shalya tantra is the surgical discipline in Ayurveda & have dual treatment procedures Shastrakarma (surgical procedure) & Anushstrakarma (parasurgical procedure). Among parasurgical procedures one of them is Agnikarma Chikitsa in which therapeutically heat applied locally with the help of shalaka (red hot rods having specific points made of dhatus like tamra, lauha etc), sneha, madhu etc. and it produced effect. It is superior among shastra & parasurgical procedures due to its simple technique & optimum result. With the help of agnikarma various diseases can be treated on O.P.D. (outdoor) basis e.g. Arbuda, Kadar, sandhigata vata, gridhrishi, musculoskeletal pain etc. Agnikarma primarily apply in diseases produced by vata and kapha doshas. It needs explorative research for standing on scientific platform & to conversant properly, with this hope an effort have been taken.

Key words – *Agnikarma, Shalaka, Ayurveda, Dahanopkaran.*

Introduction – The Veda mentions about Agni as God and use it as therapeutic purposes in treating diseases. The Charak[1], sushruta[2], Vagbhatta[3], Harita[4], Laghutrayee granthas, current text & seers of Ayurveda described the agnikarma for pain management and in treating various disorders. The term agnikarma is made up of two words Agni & karma, thus agnikarma is *"Agninakritwa yat karma, agnisambaandhi va yatkarma tad agnikarma"*[5] *(Dalhan) &* defined *as* intentional therapeutic heat burn with red hot shalaka (cuppor, lauha rod etc.) etc. Agni chikitsa, dagdha chikitsa, vahni chikitsa, vahnidagdha, dagdhakrma, dahankarma etc are synonyms of agnikarma. It is superior to ksharakarma as it prevents recurrence, and disease which is not curable by bhesaj (drugs), shastra (surgery), kshara may treat with agnikarma[6].

Indication & Scope in treatment of diseases – On practical basis the result of agnikarma are excellent in treating various diseases of musculoskeletal & neuromuscular disorders, osteoarthritis, calcaneal spur, gridhrishi (sciatica) etc. Agnikarma is practiced in present scenario as cauterisation, laser in medicinal use (lithotripsy, prostatectomy, etc.), remove warts, moles, hairs, precancerous lesion, dry eczema, cyst, keloids, lumbar spondylisis etc. It plays a major role in controlling

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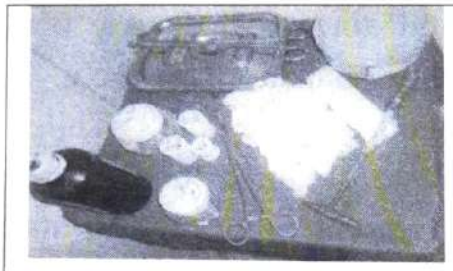
internal tissue haemorrhage, avoid recurrence in various surgeries. Acharya **Dalhan**[7] quote that agnitapt shastra prevent sepsis. Actual cauterisation or cautry(therapeutic burn of diseased tissues), chemical cautry, electrocautry(or galvanocautry), diathermy cautry, cold cautry, laser in medical use, laser photocoagulation, correcting vision, lithotripsy are the advancement and derivatives of concept of agnikarma[8]. Agnikarma done in every seasons (Sushruta sutra 12) but one should must take additional safety measure in sharad & greeshma season. It should be contraindicated or done with caution in condition of excess weak person, children's, old age, multiple wounded, pittaja roga & pittaja prakriti person, raktapitta roga, madhumeha, retaining shalya(foreign bodies) inside body, on vital points etc[9].The important diseases in which agnikarma apply or may be practiced are listed below-

Serial no.	Disease in which agnikarma indicated	Serial no.	Disease in which agnikarma indicated
1.	Charmkeel(wart)	16	Granthi(growth)
2.	Vatakantak(?calcanealspur,?plantar fasciitis,?ankle sprain, heal pain)	17	Twak-mamsha-sira-snayu-sandhi-asthi gatavatavikara & pain
3.	Kadar(corn, callosity)	18	Sirachedana, raktshrava or atiraktashrava(excess bleeding)
4.	Gridhrishi(Sciatica)	19	Nadivrana(old nonhealing sinuses)
5.	Sandhigatavata(cervicalspondylitis, osteoarthritis)[10]	20	Granthi visharpa(charak)
6.	Avbahuk(frozen shoulder)	21	Tennis elbow[11](disease of tendons & ligaments)
7.	Arsha(pile, skin tag, mamsaja vikara)	22	Vrana (Wound nonhealing, elevated margin, hard, numbness)
8.	Vishwachi(brachial neuritis)	23	Tilkalak(non elevated mole)
9.	Arbuda(tumour)	24	Neuromuscular disorders/pain
10	Plehodara, Yakritodara	25	Musculoskeletal pain
11	Vaalmiki(actinomycosis)	26	Kaphaj gulma(charak chikitsa sthana)
12	Antravridhi(inguinal hernia)	27	Ardhavbhedak(charak)
13	Jatumani(congenital mole)	28	Apachi
14	Mashak (elevated mole)	29.	Sleepad(filaria)
15	Bhagandara(fistula)		

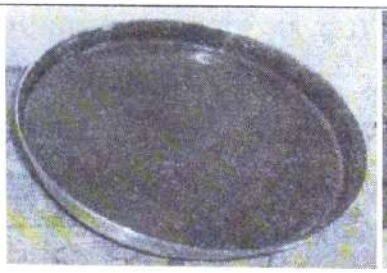
Material and Method – After proper examination and diagnosis, disease condition, involvement of dhatus, done it with the help of various dahanopkaran e.g. Pippali, Ajasakrita, Godanta, sara, shalaka, lauha, madhu, guda, sneha etc. While doing agnikarma care must be taken to avoid complication & to obtained therapeutic effect. One should must explained about procedure & take consent with patient, so follow poorvakarma(pre agnikarma), pradhan karma(during agnikarma) & paschatkarma (after agnikarma) norms. In agnikarma therapy material required are heat source, dahanopkarna(instruments or accessories to produce therapeutic burn-samyak dagdha, e.g. shalaka, sneha etc.), ghritkumari pulp, triphala kwath, yastimadhu churna, turmeric powder, bandage, bowel, sponge holder, swab, gloves, ghrita, madhu, cut towel with towel clip etc.(**Sushruta sutra 12/4 and Astanga Hridaya Sutra 30/41-43**)

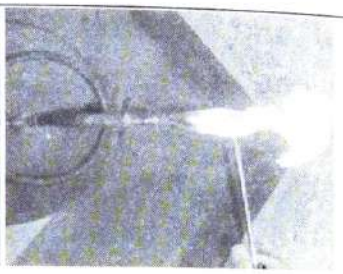
Material used for twakdagdha	Pippali, ajasakrit, godant, sara, shalaka, Varti(Guggulu etc), Suryakant mani
Material used for manshdagdha	Jambaustha, other metallic instruments,
Material used for sira, snayu, asthi, sandhidagdha	Madhu, guda, sneha

Sushruta[12] mention 4 types of dahan vishesha(shape produced during agnikarma) as valaya(circular), bindu(dot), vilekha(parallel line), pratisharan(rubbing) & **Vagbhatta** also ardhachandra(semilunar), swastika(specific shape), astapad(specific shape). The agnikarma done according to diseased seated dhatu (e.g. twak, mansha etc.) & dravya used as snigdha(with madhu, ghrit) & ruksha(lauha, pippali) after calculating suitable days & time in well lighted area faced towards east(Astanga samgraha sutra 40). After local part preparation with triphala kwath covered it with cut sheet, council the patient and then agnitapta shalaka etc are used for therapeutic burn as per desire site & in reference to shape & depth. After proper burn locally painted with ghritkumari (Aloe vera) pulp or ghrita & madhu(Sushruta sutra 12/13, Astanga Hridaya sutra 30/45) sprayed yastimadhu churna(Glycyrrhiza glabra Linn.), Shaalimool churna etc snigdha and cold things & bandaged it for one day, as it provide favourable condition for dahaprashman and wound healing produced during agnikarma.[13] Then used ghrit locally & follow up after 7 day & repeat procedure as per need. The clinical feature of samyak dagdha is anavgadha vranta (wound which is not deep), taalphal varnata(colour of the palm fruit), susamsthita vrana(without elevation or depression) without any discomfort[14].

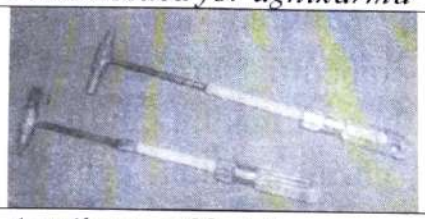


Tools needed for agnikarma

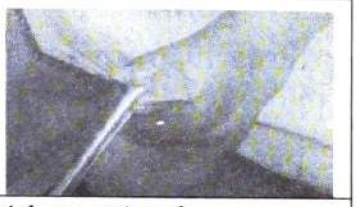




Triphala kwath, Heating of Shalaka



Agnikarma Shalaka



Position of local part, Ghritkumari pulp

Discussion on probable mode of action-

a) As there is no any established mode of action described for agnikarma therapy that how this act. It can be thought according to conditions as it remove unwanted tissue by burn at periphery in case of granthi, stop the bleeding after contracting the siras(daaha sankochayete siras- Sushruta), burn & remove the warts, destroyed chronic fibrosis tract of bhagandara, stimulate the muscular tissue and musculoskeletal tissue so remove the spasm pain etc. It avoids sepsis as there is sterilization due to high temperature while doing agnikarma.

b) Vata and kapha doshas have been considered the important factors for causation of shoth (inflammation) and shoola (pain) in the body. To treat such condition, Agnikarma chikitsa is indicated as a best treatment modality.[15] As stiffness(stabdhata), pain, movement disorders, granthi etc are mainly due to vataj and kaphaj roga so it can treated by agnikarma which having ushnaguna and are kaphavatashamak, aampachan(remove toxins), improves local tissue nourishment. It is contraindicated in pittaja roga.(Sushruta sutra 12/14).

c) Hypothetically it can be assumed that agnikarma stimulate pain & touch sensations-- → when all these impulses reach the spinal cord through posterior nerve root, the fiber of touch sensation send collaterals to the neurons of pain pathway i.e. cells of marginal nucleus and substantia gelatinosa ---→The impulses of touch sensation passing through these collaterals inhibit the release of glutamate and substance P from the pain fibers---→ this closes the gate & the pain transmission is blocked **(gate control theory for pain)**[16].

d) It burn the unwanted tissue and at the periphery of granthi, corn etc so it can be separated from base region. It burn the wart, fibrosed nonhealing tough tissue and removed.

Conclusion – On the basis of above description & result obtained in clinical practised it can be said that it is advisable in treating diseases considering in mind as apunarbhava property (resist the chance of recurrence-Sushruta sutra 12), sterilisation(prevent sepsis-Dalhan), haemostatic(raktastambhak- Sushruta sutra), kaphavatashamak, curative property etc. Exploration & research based study is needed in this invasive technique on evidence based scientific parameter in specific conditions, stage & applicability in treating above diseases. This treatment modality can be prescribed as an OPD (outdoor patient care) level procedure considering its value and safe therapeutic regimen in various diseases.

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APPEAL

All the life members who had already paid Rs. 500.00 as Life Membership fee are requested to send a DD of Rs. 500.00 in favor of A.A.I.M. payable at Varanasi for purchase of Land of office of Association (C.C.) at Varanasi. The members who will donate Rs. 1001.00 or more will be presented a certificate and their name will be published in the Journal with their Photographs. Due to increase in Postal Charges the Journal will be send only to those members who will send Rs. 100.00 as Postal Charges by M.O./ D.D. in favor of *Sangyaharan Shodh*.

Humidification in intensive care unit.

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Humidification and heating of medical gases is now well established clinical practice in intubated patients receiving ventilatory support. Under normal circumstances at a temperature of 20-22 °C,room air is only partially humidified,with relative humidity of(RH) around 40-50% with absolute humidity (AH)of18-20mgH2o/l.Through the nose and upper airways,particles and microorganisms are filtered from inspired air, which is warmed to body temperature(37° C) and fully saturated.This can ensure optimal gas exchange and respiratory function,maintaining the gas mixture within the lower airways and alveoli constant at 37° C at AH of 44mgH2o/L i.eRH-100%.Nasal mucosa and turbinate bones in the nose have the main role in these mechanism.The nasal mucosa is always moist because of its high vascularization and high concentration of mucous glands.The surface area of the turbinates,which are covered by the themucosa,hasconvulations that can increase the turbulence of gas flow.Both of these factors can increase the contact between the gas and the mucosa.As a result,inspiratory flow arriving in the oropharynx is already heated at a temperature of32-37° C and almost fully saturated.During the passage in the trachea,the gas is further heated at body temperature and charged with watervapour until the isothermic saturation boundary(Shelly MP,Resp.Care)During expiratory phase,heat and water are in part recovered by the mucosa membrane,although this recovery is not complete,and the expired air is hotter and more humidified than the inspired one resulting in a physiological netloss of heat and water(Negus VE,Thorax).

The point at which gases reach37°C and 100% RH is called **ISOTHERMIC SATURATIOBOUNDARY(ISB).**The ISB is located well below carina during quiet respiration.The evaporation leads to aloss of energy that leads to cooling down of mucous membranes.This fall in mucous membrane temperature allows recovery of water and heat through condensation in subsequent expiration.This occurs primarily in the nasopharynx.Delivery of cool and dry gases to the patient with a bypassed upper airway can lead to adverse consequences including alteration in tracheobronchial structure and function.Common findings include:

1) Inspissation of secretions.
2) Mucus plugging of airways
3) Ciliary dyskinesia
4) Epithelial desquamation
5) Tracheal tube occlusion

In addition,medical gases are dried to avoid condensation damage to valves and regulators in the distribution network.Complications after ventilation with dry and humidified gases can be prevented by addition of exogenous heat and humidity by the use of heated hot water systemsi.e.vaporisers or nebulisers.Humidification of respired gases during mechanical ventilation is a standard of care.It is always necessary when ISB has been shifted towards the periphery of the lungs i.e.when the airways are bypassed with a tracheal tube.

The humidification should be started as early as possible and should not be dispensed with even during short-term post operative mechanical ventilation.Two systems are commonly used to humidify and warm inspired gases;-Heated Humidifiers(HHs) and Heat Moisture Exchangers(HMEs) also called the Artificial noses.

Heated humidifier: It is an active humidifier that adds water vapour and heat to the inspiratory air from temperature regulated water reservoirs independently of the patient.The temperature is kept constant throughout the inspiratory limb of circuit by sensor system.The heating unit should shut off automatically at temperature above 41° C. Complication include:

1) The risk of electrical shock to both the patient and operator if the device is not properly grounded.

2) There is also the risk of burning the patients airway if excessive heat is introduced to the patient however high flow and low humidity can also contribute to this situation.

3) Bacterialcolonisation of the respiratory tubings bears the potential of cross contamination.

4) Pooling of the condensate in the patient circuit can lead to inadvertant tracheal lavage.elevated airway pressures,patient -ventilatordyssynchrony and improper ventilator performance.

Heat and Moisture exchangers(HMEs):It is placed between the ET tube and the Y piece or the facial mask.Gas and vaporized water can go through the porines,but not liquid water.Air leaving the lungs have a temperature of37degreeC and 100% RR.Expired air reaches the end of the Et tube or mouth at a temperature of33°C,RH is still 100%but AH is only36mg/l.Thus 8mgH2O/l was condensed on the way from the lung to the mouth.When expired gas reaches the HME,water condenses on the surface of the condenser compartment which releases latent heat of vaporized water,this energy heats the HME.When the expired gas leaves the filter at around 20°C AH of the gas is18mgH2O/l.Thus 18mg of water per liter is left in the HME.The higher the difference in temperature between the patient side and ventilator side of HME,the more heat and humidity are preserved in the HME.At the following inspiration,the HME transfers the heat and humidity preserved during the expiration.Upper and lower airways will transfer an additional26mgH2O/l to reach the physiological values of alveolar gases.

Advantages &disadvantages of HMEs&HHs:

	Advantages	Disadvantages
HME		
	1)No electrical hazard	Increased resistance
	2) No over humidification	Increased dead space
	3) Low cost	Rate of underhumidification
	4) No maintenance	
	5) Easy to use	

HH

1) Adequate humidification

2) Good temperature control

3) Easy to use

4) Possibility to treat hypothermia

5) Hyperthermia&risk of burnt mucosa

6) Cost

Electric hazard

2) Condensed water in limb

3) Temperature monitoring needed

4) Bacterial contamination

Mechanical effects of HME and HH

	HH	*HME*
Compressible volume	+++	+
Dead space	0	++
Inspiratory resistance	±	+
Expiratory resistance	0	++
Intrinsic PEEP	0	+
Ventilatory load	0	++

Reference:

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PRODUCT PORTFOLIO

ACEROUZ-MR/P/SP	Aceclofenac + Paracetamol + Chlorzoxazone/Serratiopeptidase
CLAVAX-625	Amoxycillin + Clavulanic Acid
CLAVAX-D	Amoxycillin + Dicloxacillin
DELROZ-G	Diacerein + Glucosamine + MSM
EZY	Doxophylline
FEBAC-XT	Ferrous Ascorbate + Folic Acid + Zinc
MIZIT-250/500	Azithromycin
NOXI-P	Lornoxicam + Paracetamol
ROFIX-100/200	Cefixime Anhydrous
ROFIX-CV	Cefixime + Clavulanate Potassium
ROFIX-OX	Cefixime + Ofloxacin
ROFIX-AZ	Cefixime + Azithromycin
RONAC-S/SP/MR	Diclofenac Potassium + Serratiopeptidase /Chlorzoxazone/Paracetamol
RONAC-XL	Diclofenac Sodium + Paracetamol + Trypsin : Chymotrypsin
ROULAST-M	Montelukast + Levocetirizine
ROULET-DSR	Rabeprazole Sodium + Domperidone
ROULET-IT	Rabeprazole Sodium + Itopride Hydrochloride
ROUPAN-40/D/DSR	Pantoprazole + Domperidone
ROUPOD-CV 325	Cefpodoxime + Clavulanate Potassium
SINPAR-650	Paracetamol
THIOKOL	Aceclofenac + Thiocolchicoside
TRICK-10	Cetirizine
X-FLAV	Flavoxate
ZECOBAL-G	Gabapentin + Methylcobalamin
ZECOBAL-P	Pregabalin + Methylcobalamin
ZELCAL	Calcium Carbonate 1000mg + Vit. D3
ZELCORT-6	Deflazacort
ZELFIX-250/500	Cefuroxime
ALMOR	Meropenem
CILAZEL	Imipenem + Cilastatin
CLAVAX 1.2	Amoxycillin + Clavulanic Acid
FEBAC-S 2.5/5ml	Ferric Hydroxide Complex With Sucrose
FOZAC	Cefoperazone Sodium + Sulbactam
MIZIT	Azithromycin
MPROZ	Methyl Prednisolone Sod. Succinate
MPROZ-A	Methyl Prednisolone Sod. Acetate
PIPZAR	Piperacillin + Tazobactam
ROCEF 250/500/1GM	Ceftriaxone
ROCEF-S 1.5/375/750	Ceftriaxone + Sulbactam
ROCEF-T	Ceftriaxone + Tazobactam
ROCYP	L-Ornithine-L-Aspartate
ROMIK-100/250/500	Amikacin
ROUPAN-IV	Pantoprazole Sodium
ROUVIT PLUS (Dispo. Pack)	M.cobalamin + P.doxine + Niacinamide
ROZID 250/1gm	Ceftazidime 250,1gm
ZACORT-100/200	Hydrocortisone Sodium Succinate
ZELCAL D3	Vitamin D3
ZELDAC-25/50	Nandrolone Decanoate (Dispo. Pack)
ZERTAN	Tranexamic Acid
GRAPZEL	Grapeseed Extracts + Multivitamin + Multiminerals
LYCOGEL	Lycopene + Multivitamin + Multiminerals
NATUPROZ-100/200	Natural Micronised Progesterone
ROUVIT	Ginseng Powder + Multivitamin + Multiminerals
ZECOBAL	Mecobalamin + Alpha Lipoic Acid + Pyridoxine HCl (Vit. B6)
ZELCAL-CT	Calcitriol 0.25mcg + Calcium Carbonate + Zinc 20mg + Magnesium Oxide

Our Experiences of Foreign Body Removal from Digestive Tract in Children

*Singh R Badan, **Dubey RK, ***Kumar V, ****Sharma SP

Abstract:

About 97 children with foreign body [FB] in digestive tract were admitted forremoval of F.B. in our hospital. All patients were anaesthetized with injectionPentazocine 0.5mg/kg, Thiopentone *5mg/kg, and Suxamethonium 1.5mg/kg bodyweight followed by intermittent positive pressure ventilation. After laryngoscopicvisualization of FB in oesophagus, Magill forceps was applied to hold and removeforeign body. Patients were ventilated with bag and mask up to full recoveryof spontaneous respiration. In those patients where FB was not visible duringlaryngoscopy, patients were intubated and anaesthesia was maintained. Rigid Oesophagoscope was passed in oesophagus and FB was removed. All patientswere reversed from anaesthesia and shifted in ward for observation.*

Keywords: Foreign Body, Digestive tract, Anaesthesia.

Introduction: Foreign bodies [FB] in the digestive tract are an important cause of morbidity and mortality in paediatric age group, and pose diagnostic and therapeutic challenges [1, 2]. Most commonly, children in their first six years of life are affected, with a peak incidence in children between 1 and 3 years [2, 3]. The clinical presentation depends on site, nature, age of patient and duration [4]. Spectrum of clinical manifestations ranges from asymptomatic to long term complication like esophageal stricture. We performed this study to present our experience of foreign bodies of digestive tract in children over a five year period [5, 6].

Patients and Method:

A retrospective study was conducted in the department of Paediatric surgery, S.S. hospital, Banaras Hindu University, Varanasi, over a 4-year period between April 2009 and March 2013. All patients who were managed for foreign body in digestive tract up to 12 years of age presenting during the study period were included.

Data was collected, using case records of patient, regarding age, gender, duration, type, anatomical location of FB, treatment given, duration of hospital stay, intervention performed for removal, anaesthesia technique, complications and mortality. All patients were anaesthetized with injection Pentazocin lactate 0.5mg/kg, Thiopentone 5mg/kg, and Suxamethonium 1.5mg/kg body weight followed by intermittent positive pressure ventilation.

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After laryngoscopyand visualization of F.B. in oesophagus, Magill forceps was applied to hold and remove foreign body. Patients were ventilated with bag and mask up to full ecovery of spontaneous respiration. In those patients where F.B. was not visible during laryngoscopy, airway secured with endotracheal tube and anaesthesia was maintained with oxygen, nitrous oxide, halothane and atracurium. Rigid oesophagoscope was passed in oesophagus and FB was removed. FB located below the oesophagus were removed by operative intervention. All patients were reversed from anaesthesia using inj. glycopyrrolate 10 microgram/kg and neostigmine 50 microgram/kg body weight, and shifted in ward for observation.

*Results:*Total 97 patients with FB in digestive tract were included in the study. FB was most commonly loged in upper esophagus in 61 patients, middle esophagus in 12 cases, lower third of esophagus in 14 cases, and beyond gastro-oesophageal junction in 10 cases. Sixteen (16.4 %) patients presented to hospital within 24 hours, whereas 71 (73.1%) presented between 1 day to 5 days, and the remaining 10 (10.3%) presented to hospital after 5 days [Table 1]. A positive history of foreign body ingestion was recorded in 76 (78.3%) of cases, whereas in the remaining 21 (21.6%) patients the diagnosis of FB in the digestive tract was made based on clinical presentation and radiological investigation on admission. Ninety(92.7%) patents were asymptomatic at admission.

The most common clinical presentations were dull pain, odynophagia, vomiting, drooling of saliva and difficulty in swallowing Coins were the most common type of foreign body in the esophagus accounting for 71.1% of patients [Table 2]. Plain neck and chest x-rays antero-posterior and lateral view was diagnostic in all cases, with all FB being opaque. The patients with FB in upper oesophagus were anaesthetized with injection Pentazocin lactate 0.5mg/kg, Thiopentone 5mg/kg, and Suxamethonium 1.5mg/kg body weight, followed by intermittent positive pressure ventilation. After laryngoscopy and visualization of FB in oesophagus, Magill forceps was applied to hold and remove foreign body. All patients were ventilated with bag and mask up to full recovery of spontaneous respiration. In those patients where FB was not visible during laryngoscopy were intubated and anaesthesia was maintained with oxygen, nitrous oxide halothane and atracurium. Rigid oesophagoscope was passed in Oesophagus to remove FB. Patients were reversed from anaesthesia and shifted in ward for observation. Magill forceps extraction was the main treatment modality performed in 63 (65.8%); and rigid oesophagoscopy and removal under general anesthesia was done in 20 cases out of 87 cases having FB above gastro-esophageal junction. In remaining 4 cases sharp FB was pushed in stomach and was retrieved by laparotomy in same sitting. In 10 (10.3%) patients with FB below gastro-esophageal junction, 2 patients with sharp open safety pins, 1 case needle and one case with button battery and peritonitis required laparotomy. In 5 cases FB passed spontaneously. In one follow up case of common cloaca with colostomy and stenosis, FB removal was performed under general anesthesia. Two follow up cases of tracheo-esophageal fistula [TEF] presented with lodged peanut at anastomotic site. In 2 cases with battery ingestion, acquired trachea-esophageal fistula repair was performed after 6 weeks of gastrostomy performed during first hospital stay. A total of 68 (82.9%) required at least an overnight hospitalization to be able to monitor immediate postoperative complications resulting from the procedure and anesthesia. 12 post operative complications were recorded [Table 3].

Table 1. Patient's characteristics:

Characteristic	No. of patients	Percentage (%)
Age		
0-5 years	46	56.0
5-10 years	25	30.0
10-15 years	11	13.4
Total	82	100
Gender		
Male	48	58.5
Female	34	41.4
Total	82	100

Table 2. Types of foreign bodies recovered from Digestive tract.

Type of F.B.	Number	Percentage
Coins	**69**	**71.1**
Buttons	**6**	**6.1**
Batteries	**4**	**4.1**
Needles	**4**	**4.1**
Screws	**4**	**4.1**
Safety pin	**3**	**3.0**
Hair pin	**2**	**2.0**
Locket	**2**	**2.0**
Nose ring	**1**	**1.0**
Metal plate	**1**	**1.0**
Locket	**1**	**1.0**
Total	**97**	**100**

Table 3. Complications:

Complications	Number	Percentages
Septicemia	6	7.3
Wound infection	4	4.8
Oesophageal stricture	1	1.2
Oesophageal perforation	1	1.2

Discussion:

Foreign body inhalation is common worldwide [1]. Children aged between 1 and 5 years of age are commonly affected [2, 3]. In the present study, the majority of patients were children aged five years and below which is in agreement with other studies [2, 3]. Overactive nature of male children as compared to the females may be attributed to male preponderance in our study (M: F = 1.4:1) which is in agreement with other studies [7]. Fifty-nine (71.9%) of the patents were asymptomatic on admission. In the present study, a positive history of foreign body in the aerodigestive tract was recorded in 93.9% of cases and 69.4% of these were found to be asymptomatic on admission which is comparable to other studies [8]. Esophagus is the commonest site of FB impaction followed by laryngo-tracheo-bronchial tree [9]. Once FB crosses the cricopharynx, it can pass whole gastrointestinal tract. The majority of swallowed foreign bodies pass harmlessly and spontaneously through the gastrointestinal tract [10], but in case of lodgment or toxicity of the object, the FBs must be rapidly identified and removed. Most frequent lodgment site in our study was at cricopharyngeal muscle which is in agreement with the literature [11, 12]. Sharp items can lodge anywhere, and patients who have esophageal abnormalities such as tracheoesophageal fistulas are at risk of entrapment in atypical locations. Two of our follow up cases of TEF presented with lodged peanuts. Such children are high risk for FB lodgment and parents should be explained about the problems. We have also observed children with stomas with stenosis having lodged foreign bodies. Although most objects pass easily through the intestine, entrapment can occur at the pylorus, at the ligament of Treitz, and at the ileocaecal valve [13]. The commonest foreign bodies found in our study were coins. Objects characteristics such as shape, dimension, and consistency are important in order to determine the damage that might occur. Rimell and Stool [14] performed a retrospective study, in which they examined the characteristics of objects that had caused serious aerodigestive tract (airway, cricopharyngeal, or esophageal) injuries; with the definition of serious being indicated by the need of operative removal or the occurrence of death due to choking, as reported from the Consumer Product Safety Commission (CPSC). Their results confirmed previous reports found in the medical literature, showing that the risk of injury or death posed by food, toy or toy part or another object depends upon its size, shape,
and consistency [15, 16]. In our series, we have observed three cases with complications. Two case of acquired TEF were due to disc batteries, and one case of perforation peritonitis was

due to sharp nail. Disc batteries were recognized with by presence of rim sign on X-ray [Fig 6]. In battery ingestion, the mechanism of injury occurs by four different means including direct corrosive action due to leakage, toxic effect due to absorption of substances, low voltage burns, and pressure necrosis [19-21]. Liquefaction necrosis and perforation can occur in 4 to 6 hours after a disc battery is lodged in the esophagus and so removal is desirable within 6 hours [22-24]. For all the gastrointestinal foreign bodies, the type of object, its location, and child's symptoms dictate the treatment. In most cases of spontaneous passages occurs within 16 hours of observation [17]. Although most gastric objects pass without complications and can be observed in the outpatient setting, approximately 70% of esophageal objects remain entrapped, especially those in the upper or mid-esophagus [18]. Our experience shows that late presentation is due to delayed referral and misdiagnosis in peripheral centers. Late presentation is more common in asymptomatic cases. X-ray evaluation is indicated for all patients in whom an esophageal FB is suspected [25]. However, a negative radiographic result does not exclude the presence of foreign bodies in the aerodigestive tract as radio-lucent
objects like rubber materials, groundnuts and bolus of meat are not easily detected by plain radiography. Barium studies are also useful [26]. In undetected cases, computed tomography (CT) scanning should be done [27]. Endoscopic removal of foreign bodies in the aerodigestive tract using rigid scopes under general anesthesia has been reported to be a golden standard procedure [25]. This is both a diagnostic and a management method and is generally recommended for most patients with history of FB ingestion. Rigid endoscopy, as compared to flexible endoscopy is a useful method to diagnose and remove foreign bodies in the erodigestive tract as it has a large lumen and allows better visualization of the potential anatomic sites of foreign body impaction in the aerodigestive tract [28]. However, the procedure is not without risks especially perforation which has a high morbidity and potential mortality. Besides the
surgical risks the patients is also subject to anesthetic risks. Other treatment modalities in the removal of foreign bodies in the aerodigestive tract include use of Magill forceps and Foley's catheter in the removal of foreign bodies in the esophagus [29]. In the present study, rigid endoscopy (oesophagoscopy and bronchoscopy) with forceps removal under general anesthesia was the main treatment modality performed which conforms with others studies. Magill
forceps have also been found to be a possible method for removing coins from the upper esophagus or just below the cricopharynx [30]. This method is minimally invasive and quick, and can be used in children with respiratory distress (because the airway is secure), or when the duration of coin impaction isindeterminate, or there has been previous esophageal surgery [30]. In our study, the foreign bodies were successfully removed without complications in 90.8% of cases which is similar to other studies reported elsewhere [25]. The complications
typically encountered include perforation, laceration, abscess formation and mediastinitis [31]. However, the complication and mortality rates in our study were found to be higher than that reported in other studies [30]. The reasons for this observation could be as a result may be due to delayed referral and a failed, traumatic attempt in peripheral hospitals in hands of inexperienced operators. Surgery is rarely performed but is relatively successful [32]

Conclusion:

Foreign bodies in digestive tract of children are a common problem with diverse presentations. Disc battery ingestion is prone for complication and expedient removal is required. Associated conditions like repaired TEF or stoma with stenosis are high risk factors for lodgment of foreign bodies.

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"Sleep disturbance in Menopause and their Ayurvedic management"

*** Dr. Kumari Shipra **Dr.(Prof.) Neelam**

Abstract-Sleep is defined as unconsciousness from which the person can be aroused by sensory or other stimuli. It is a state in which awareness, responsiveness, brain activity and movement decrease, and can be categorised as either rapid eye movement (REM) or slow wave (non-REM) sleep. In REM sleep the brain remains very active, rapid eye movements occur, dreams are common and arousal occurs relatively easily. Slow wave or non-REM sleep is deep sleep, in which brain activity decreases markedly and arousal is more difficult.

यदा तु मनसि क्लान्ते कर्मात्मानः क्लमान्विताः। विषयेभ्यो निवर्तन्ते तदा स्वपिति मानवः।। च सू 21/35)

सर्वेन्द्रियव्युपरतौ मनोऽनुपरतं यदा । विषयेभ्यस्तदा स्वप्नं नानारूपं प्रपश्यति ।। अ० सं० सू ० 9/40)

Sleep is important as in maintaining health and balance in between body and mind. Sleep is the time when the body is able to repair and heal itself.

Women are more likely to experience sleep disturbances in the menopausal period than at other times of life. Poor quality sleep is a common complaint amongst menopausal women, of whom 25–50% report sleep difficulties, compared to some 15% of the general population. Menopausal women are 3-4 times more likely to experience sleep disturbances compared to pre-menopausal women.

Sleep disorders which may affect menopausal women include insomnia, sleep disordered breathing and sleep difficulties underpinned by other conditions that increase in menopause such as fibromyalgia and depression.

Psychological conditions, including anxiety, depression and stress can contribute to sleep disturbance in menopausal women. For many women, stressful life changes often coincide with menopause and these may affect sleep. Poor sleep quality in menopause may be real or perceived.

Ayurveda described sleep disturbance is due to predominance of Vata dosha. It could be understood as hormonal changes. They are probably only one of many factors contributing to the age-related increase in sleep disturbances in women.

वातोत्तराणां नियतं निद्रा नाशं व्रजत्यपि ।भे०सं० चि० 23/9)

निद्रानाशोऽनिलात् पित्तान्मनस्तापात् क्षयादपि । सु ०शा० 4/41)

By the rational use of Ahara, Vihara, and Aushadha described as in Ayurvedic literature for Anidra and Manovasad, their sleep disturbance during menopausal period can be prevented, and they could enjoy their life smoothly. Yoga aasana and pranayama also play a vital role in such problems.

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Key words- Sleep disorder, Menopause, Vata dosha

Introduction-

Menopause is the phase of a woman's life when she stops ovulating and stops her monthly menstrual bleeding.

तद्वर्षाद् ..... । जरापक्वशरीराणां याति पन्चाशतः क्षयम् ।। (सु० शा० 3/9)

Menopause is associated with significant hormonal changes – in particular, the rapid cessation of oestrogen production by the ovaries and rapid decline in oestrogen available to the woman's body.

Approximately 75%-85% of menopausal women experience hot flushes, which can last for five years. Hot flushes and sweating can make it difficult to sleep. According to the National Sleep Foundation, approximately 61% of menopausal women have sleep problems. Sleeping difficulties can lead to other problems, such as daytime drowsiness.

Sleep can be measured both objectively and subjectively. Most of the menopause-related sleep disturbances have been reported as qualitative in nature; however, there have also been studies showing changes in objective measures. This discrepancy has implications with regard to evaluation of research in sleep and menopause, as well as application in the clinical setting. Investigations of inadequate sleep and sleep problems during the menopausal period and obtaining a thorough understanding of the factors contributing to these problems are essential in formulating treatment strategies. Such strategies can vary from hormonal treatment and medications to lifestyle and behavioural modification.

According to Ayurveda this is included under the heading of Vaikariki nidra and the pathophysiology is, aggrevation of vata dosha and decrease quantity of shlesma (kapha) alongwith discomfort in body and mind.

क्षीणश्लेष्मणामनिलबहुलानां मनःशरीराभितापिनां च नैव सा वैकारिणी भवति ।। (सु. शा 4/32)

Discussion: Metabolic rate decreases and energy is conserved during sleep, allowing body functions such as synthesis of proteins and complex molecules more rapidly than when a person is awake. Individuals typically experience phases of REM (light) and non-REM (deep) sleep throughout the night, with REM sleep phases occurring approximately every 90 minutes. The need to sleep is associated with the duration of time since the last period of non-REM sleep, and increasing sleep deprivation is associated with increased non-REM and reduced REM sleep. Sleep disorders which may affect menopausal women include insomnia, sleep disordered breathing and sleep difficulties.

Evidence suggests that sleep disturbances increase in the menopausal period. Studies which have used physiological measures (e.g. brain activity during sleep) to assess sleep quality has shown that perceived sleep quality does not always correlate with an objective measure of sleep quality. Women may perceive that their sleep quality decreases despite no changes in the depth and duration of sleep.

Hormonal effect on sleep-disturbance in Menopause-

Progesterone and oestrogen levels decrease with menopause, both impacts on sleep. Progesterone has a sedative effect due to its stimulation of benzodiazepine receptors. It also stimulates respiration, which may reduce the likelihood of sleep apnoea (breathing cessation during sleep). The effects of oestrogen are more complex, but it has been shown to increase the number of REM sleep cycles. Increased frequency of awakening from sleep is associated with low oestrogen levels.

Oestrogen also affects thermoregulation (regulation of body temperature) and, by decreasing core body temperature, improves menopausal vasomotor symptoms, which are a primary determinant of sleep quality in menopausal women.

Luteinising hormone is produced by the pituitary gland, which triggers ovulation in women. In menopause, when the ovaries fail to respond (ovulate) to an increase in LH secretion from the pituitary gland, it in turn responds by producing additional LH. Thus LH level rise in menopause. LH changes play a role in menopausal insomnia and that treatments aiming to reduce LH surges may be effective in improving sleep for these women.

Sleep-related breathing disorders are common in women, but increase during menopause and are thought to underpin menopausal sleep disturbances. High progesterone levels during reproductive life are thought to protect women from breathing disorders, leading to an increased prevalence post-menopause.

Psychological conditions

Psychological conditions, including depression and stress, can contribute to sleep disturbance. Complaints of anxiety have also been associated with poor sleep in menopausal women. For many women, stressful life changes often coincide with menopause and these may affect sleep. They include:

-Re-entering the workforce and other employment changes;
-Children leaving home;
-Caring for children or a parent;
-Divorce from or death of a partner; and
-Caring for an ill partner.

Psychological and behavioural therapies that help to increase the ability to cope with stress may therefore be an option for improving sleep quality in menopausal women (मनोऽनुकूला वि ाया: ३३ निद्रासुखप्रदा । अ० सं० सू ० 9/65). In menopausal women, stress is associated with a self-perceived reduction in sleep quality but not a reduction in objectively measured sleep quality. Menopausal women perceived insomnia with psychological distress and somatic symptoms (symptoms with no explainable cause which typically include pain, fatigue and irritable bowel).

Risk factors for sleep-related disordered include:

1. Obesity has been found to be the key predictor of sleep-related disordered breathing and a risk factor for apnoea, both of which are commonly associated with disturbed sleep;
2. High B.P associated with a three-fold higher risk of snoring, and increases with increasing sleep-related respiratory distress;
3. Snoring, either frequent or occasional, and loud snoring commonly occur with disturbed breathing;
4. Morning headaches;
5. Evidence also suggests that women with psychological complaints such as depression and stress have a higher risk of sleep impairment in menopause.

Management of sleep disturbance in menopause (according to Ayurveda):

According to Ayurveda sleep problems are caused by imbalance of three doshas and particularly the predominance of Vata dosha. So Vatashamak Ahara, Vihara and Aushadha including psychotherapy alleviate these problems in menopausal women.

Herbs with sedative properties and mood alleviators can be taken in a variety of different ways.

अभ्यंगो उत्सादनं स्नानं ग्राम्यानूपौदका रसाः। शाल्यन्नं सदधि क्षीरं स्नेहो मद्यंमनः सुखम् ।।

मनसोऽनुगुणा गन्धाः शब्दाः संवाहनानि च । चक्षुषोस्तर्पणं लेपः शिरसो वदनस्य च ।। (च.सू . 21६52.54)

वस्तयः स्नेहपानानि ग्राम्यानूपौदका रसाः। गुडदुग्धस्य पानं च निद्रासन्जननं परम् ।

अभ्यंगो उद्वर्तनं स्नानं मघं मधु धृतं तथा । मनः प्रसादो निर्वाणं नष्टनिद्रस्य भेषजम् ।। (भे.सं. चि. 23/9-11)

Indications of Ahara-

1. Madhura and Snigdha ahara- ex. Rice(Shali rice), godhuma, milk, ghee, sugarcane, grapes, honey, jaggery etc.
2. Mamsa rasa(soup of meat)
3. Use of Aasav and Arishta

Indications of Vihara-

1.Oil massage using sesame oil at night, particularly to head, limbs, and soles, followed by a warm shower or bath, and instilling oil in ears has a relaxing and calming effect, and helps balance Vata and promote good sleep,

2. Hair oil made from Aloe Vera juice (Kumari) and sesame oil boiled together can be rubbed on the head before bed to calm the mind,

3. Brahmi oil works well when massaged on the soles of the feet and the scalp at bedtime,

4. A warm herbal bath before bed with added strong infusions or dilute essential oils,

5. **Yoga-asaana , Pranayama-** Exercise regularly to promote better sleep, which can in turn improve mood;

Indications of Aushadha-

1. **Ashwagandha** is an excellent sedative herb which nourishes to a depleted nervous system, particularly recommended for all problems associated with excess Vata.

[¼ – ½ tsp of the powder taken with raw sugar and ghee at night is traditionally used. It can also be taken in warm milk with a little raw sugar or honey, both morning and night.]

2. **Brahmi (Centella asiatica)** has a relaxing effect, calming an agitated mind and can be given before bed. It can be mixed in equal parts with Bhringaraj (Eclipta alba), **Jatamansi** (Nardostachys jatamansi) and **shankapushpi** (Convolvulus pluricaulis).

[¼ – ½ tsp of the mixture in ½ cup of hot water, and sweeten with honey if required].

3. Draksasava, (2-8 tsp at night) is helpful.

4. **Use of Phytoestrogen-** Women demanded phytoestrogen as *option to conventional hormone replacement therapy. Plants that contain phytoestrogen are used for treatment in this disease include red clover, licorice, soybeans, flaxseeds, black cohosh, and alfalfa.*

Indications of Psychological therapies-

Stress management is a reasonable treatment option for women who are anxious or distressed and experiencing sleep disturbances. Counselling about sleep hygiene, sleep patterns, and, depending on severity, sleep restriction and stimulus control have a role in relieving sleep disturbances. Some point should must be adapted by women during menopause to short come such problem-

1. Talking to trusted family members and friends can also be useful;

2. Examine your attitude to ageing and other changes which are occurring (e.g. body changes). Focus on the positive things that await for post-menopause, and try to look forward to the next stage of life;

3. Keep a diary of thoughts and feelings. This may help to identify things that trigger bad moods and develop strategies for coping with them.

Conclusion:

देहवृत्तौ यथाऽऽहारस्तथा स्वप्नः सुखा मतः । स्वप्नाहारसमुत्थे च स्थौल्यकाशर्यै विशेषतः ।। (च०सू० 21/51)

Sleep is the sweet balm that soothes and restores after a long day of work. But if it will get alter in menopausal women, they may create an unhealthy condition in both body as well as mind. Such diseases are known as psychosomatic diseases and are harmful for health. It is due to hormonal imbalance in menopause. In Ayurveda, it is described under the heading of Vata predominance disease. By using Ayurvedic remedies any women could enjoy their healthy status during menopause by overcoming such disturbance.

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Anaesthesia: What Ayurveda Has To Offer

*** Dr. Gaurav Phull ** Dr. Rekha Phull,**

Anesthesiology is a leading branch of modern medicine without which smooth functioning of any allopathic hospital can't be imagined. In Ayurveda,it is denoted by term: *SANGYAHARAN.* At present, the earlier eight divisions of Ayurveda have been developed into 22 viable disciplines in which *'Sangyaharan'* (Anaesthesiology) is recognized as a separate one. It has been given the due importance in present era and specialized degree and diploma courses are being run by various institutes.

HISTORICAL REVIEW

There are various historical evidences which give ample proof that even during the ancient period, the technique of anaesthesia was prevalent, although the term *'Sangyaharan'* was not used in *Ayurvedic* literature. The references are found in VEDAS and various classical Ayurvedic texts which suggests its existence in that era too. But unfortunately, sufficient details of the drugs and procedures are not found.

In *'Bhoj Prabandh'* there is a description of *"Sammohan churna"* being used to produce anaesthesia and make the patient unconscious.

Renowned surgeon *Jeevaka* performed surgery on brain and other organs during the period of *Buddha* and he probably used some form of sangyaharan while doing so.

Acharya Sushruta has clearly advocated the use of *'Madya'* (medicated alcohol) before surgery to relieve pain and anxiety related to the surgery.

Acharya Charak has also advised the use of *'Vednasthapana drugs'* to relieve pain and mantras to relieve the pain of labour.

Some restorative and rejuvenating plants are even mentioned in *Valmiki's Ramayana* by the name of *'Sanjivani'.*

All these evidences truly suggest that surgery and anaesthesia were much advanced during ancient period and the technique of anaesthesia was prevalent even in those days in some form.

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PRESENT SCENARIO

Presently, we may be lacking in anesthetic drugs but *the area where Ayurveda can really contribute is pre-operative and post-operative period.*

- **PRE-OPERATIVE PERIOD:**

Pre-operative management is an important concept in optimizing patient physiology *before* they enter the operation theater.Conceptually, when patients are adequately prepared psychologically and physically, and policies and guidelines have been followed, the risk of post-operative complications is minimum, leading to a quick recovery and a better patient outcome. In Pre-operative period ayurvedic relaxation therapies like pranayam can be advised to the patients, this may help to make the patient calm and relaxed.

Preoperative medications - Various kinds of pre-operative medicines are normally used like Anti-emetics, Opioid analgesics, Sedatives/anti-anxiety drugs, Antacids, Anti-cholinergics.
Thus Ayurvedic drugs having anxiolytics and anti-emetic effects can be used as pre-op. medication.

Anxiolytics

Patient anxiety is a significant consideration to address pre-operatively because it has significant hemodynamic effects, which may affect the intra-operative anesthetic medications given during surgery. This potentially increases the incidence of post-operative complications, particularly nausea, vomiting, and blood pressure control.
Pre-medication with an appropriate anxiolytic facilitates a better psychological state throughout the peri-operative period.

AYURVEDIC REVIEW

Plants commonly used as Anti–anxiety Drugs

Brahmi	*Centella asiatica*
Amalki	*Emblica officinale*
Vacha	*Acorus calamus*
Ashwagandha	*Withania somnifera*
Shankpushpi	*Evolvulus alsinoides*
Jyotishmati	*Celastrus paniculata*
Jatamansi	*Nardostachys Jatamansi*
Tagar	*Valeriana wallichii*
Shatavar	*Asparagus racemosa*
Yashtimadhu	*Glycyrrhiza glabra*

- These drugs along with other medhya (brain tonics /intellect improvisers) drugs can be efficiently used for the anti- anxiety purpose as pre-medication.Powders of multiple drugs can also be used . Like saraswat choorna, tagaradi choorna and ashvagandhadi choorna, and single drug choorna like vacha choorna, jatamansi choorna are used.

- The use of brahmi medicated oil on scalp at bed time and inhalation is a better preventive measure to avoid the anxiety in peri-operative period.

- Current evidence suggests that acute anxiolytic activity was found in Centella asiatica, Salvia spp., Melissa officinalis, Passiflora incarnata and Citrus aurantium. Bacopa monnieri has shown anxiolytic effects in people with cognitive decline.

MODERN ASPECT-

Many researches have been done to evaluate effect of herbal formulations.

1. BRAHMI

Active constituents: The herb contains the alkaloids *brahmine, herpestine and nicotine*,along with *saponins, monnierin and hersaponin.* Hersaponin is reported to have cardiotonic and sedative properties. These constituents work synergistically to render the herb its pharmacological constituents.

Anxiolytic: Brahmi relieves nervous irritation or agitation. It is used traditionally for treating psychosis, epilepsy and anxiety.

2. AENDRI (BACOPA MONNIERI)

Persons over the age of 65 taking 300mg Bacopa Monnieri (55% Bacosides) experienced a decrease in both anxiety and depression in a double-blinded study although 450mg of Bacopa for 3 months in otherwise healthy males with no baseline anxiety failed to find a significant effect.[1]

3. ASHWAGANDHA

In validated models of anxiety and depression, Ashwagandha has been demonstrated to be as effective as some tranquilizers and anti-depressant drugs. Specifically, oral administration of Ashwagandha (WSG 20 and 50 mg/kg) for five days suggested anxiety-relieving effects similar to those achieved by the anti-anxiety drug:- *Lorazepam*, and anti-depressant effects similar to those of the anti-depressant drug:- *Imipramine*.[2]

Both WSG(glycowithanalides) and lorazepam, reduced rat brain levels of tribulin, an endocoid marker of clinical anxiety.[3]

4. TAGAR- (*VALERIANA WALLICHII)*

It has Sedative-hypnotics, anxiolytic, antidepressant, anticonvulsant, and antispasmodic effects .The *Valerenic acid* also appears to inhibit the enzyme system responsible for the central catabolism of GABA, increasing GABA concentration and decreasing CNS activities

There is also some evidence that may suggest valerian containing other constituent such as *lignan* and GABA, which may be responsible for sedative effects of valerian .Valerian is a mild sedative and sleep-promoting agent that is often used as a milder alternative or a possible substitute for stronger synthetic sedatives, such as benzodiazepines, in the treatment of states of nervous and anxiety-induced sleep disturbances

5. JATAMANSI

Anxiolytic activity- Causes overall increase in the levels of central monoamines and inhibitory amino acids,Serves as effective tranquilizer,Possess anticonvulsant profile and known to be having some diuretic properties thus,it lowers down the stress related hypertention.

6. MISCELLANEOUS

Kava-kava (Piper methysticum) and St. John's wort (Hypericum perforatum) showed beneficial effectiveness in double blind, randomized placebo controlled trials to treat anxiety and depression[4] *(Ernst, 2002).*

Also, extracts of valerian, hops, lemon balm and passion flower preparations have been employed for the prevention and treatment of psychiatric disorders such as anxiety, sleep disorders, convulsions, cognitive impairment and depression[5] *(Beaubrun and Gray, 2000).*

The anxiolytic plants can be summarized as follows[6]:-

Name of plant	Family	Part used	Effect
Withania somnifera (Linn.) Dunal	Solanaceae	Root Glyco withanolides	Anxiolytic effects
Zingiber officinale	Zingiberaceae	Butanolic fraction	Anxiolytic effects
Valeriana edulis ssp.	Valerianaceae	Hydro-alcoholic extract of roots	Anxiolytic effects
Euphoebia neriifolia Linn.	Euphorbiaceae	Hydro-alcoholic extract of leaves	Anxiolytic effects
Cuminum cyminum Linn.	Apiaceae	dried ripe fruits	Antistress
Centella asiatica (Linn) Urban	Apiaceae	Methanol and ethyl acetate extract	Anxiolytic effects
Bacopa monnieri (Linn.) Penn.	Scrophulariaceae	Whole plant	Anxiolytic effects
Azadirachta indica A. Juss.	Meliaceae	Aqueous extract of leaves	Anxiolytic effects
Albizia lebbeck benth.	Mimosaceae	Butanolic fraction of dried leaves extract	Anxiolytic effects
Boerhauvia diffusa Linn.	Nyctaginaceae	Roots	Antistress

A. ANTI-EMETICS (To check PONV)

- Ayurvedic system of medicine is more compatible and rewarding in the present era. In Modern science, till date there is no effective treatment for the disease 'PONV'. So, in an attempt to discover a safe and effective remedy for this particular problem,a clinical study was conducted by me during my post graduation on efficacy of herbal drugs as premedication to prevent PONV.

- According to **Acharya Chakradatt**[7] ,Following drugs are known to have anti-emetic effects:-*Haritaki – Terminalia chebula,Madhu – Honey,Trikatu – Shunthi, Marich, Pippali,Dhanyak – Coriandrum sativum,Jeerak – Cuminum cyminum*

Properties and probable mode of action of these drugs having anti-emetic effect can *be summarized*

Dravya	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Karma/Prabhava*
Haritaki	Kashaya,Tikta, Amla, Katu, Madhura	Laghu, Ruksha	Ushna	Madhura	Tridoshhara, Grahi, Bhedana, Pachana, Dipana, Anulomana
Sunthi	Katu Madhura	Laghu Snigdha	Ushna	Madhura	Rochana, Dipana, Anulomana
Marich	Katu	Laghu Tikshna	Ushna	Katu	*Dipana*
Pippali	Katu, Tikta, Madhura	Laghu, snigdha	Anushna	Madhura	Dipana, Rochana, Vatahara, Kaphahara
Dhanyak	Katu Madhura Tikta	Laghu Snigdha	Ushna	Madhura	*Dipana, Pachana*
Sweta Jeerak	Kashaya Katu	Laghu Ruksha, Tikshna	Ushna	Katu	Dipana, Pachana, Rochana, Grahi

Probable Mode of Action:

- The anti emetic effect (to reduce incidence of PONV) of the these drugs can be well understood on bases of *Ayurvedic* **principles** as follows:-
- *Haritaki* is vata shamaka by nature despite having tridoshaghna properties. PONV occurs due to vitiation of *vata dosha* and derangement of other *doshas* which are impelled upwards. *Haritaki* and *Shunthi* have *anulomana* action (Prokinetic effect) which enhances gastric emptying.
- Similarly most of the other anti-emetic drugs are having vata-kapha shamaka properties. All the drugs have *Ushna virya* (only Pippali has *Anushna virya*) which brings vitiated *vata* and *Kapha dosha* to normal level.

- All these drugs help to remove '*ama' dosha* which is major cause of any disorder including emesis and nausea, due to their *deepana- paachna* properties.
- *Madhu* provides soothing effect on gastric mucosa thus preventing gastric irritation. Madhu is also 'Yogvahi'(i.e it enhances effect of other drugs). So, all these effects collaborate to reduce/check the incidence of PONV.

Modern Aspect

- **Shunthi (Ginger)**-its aqueous extract inhibits $CuSO_4$ induced vomiting.Pretreatment with gingerol markedly suppresses the increased immuno-reactivity of substance P and NK_1 receptor by cisplastin. *Gingerols* and *shogaol* exert anti-emetic effects by acting on the 5-HT_3 receptor ion channel complex.
- *Haritaki* has proven gastrokinetic effect which helps in enhancing gastric emptying.
- **Honey** (*Madhu*) provides demulcent/soothing effect on gastric mucosa, prevents gastric irritation.[8]
- *Trikatu* enhances the bio-availability and efficacy of other medicines as proven by the studies.
- **Honey,** *Marich* **and** *Pippali* have good anti microbial activities
- *Dhanyak* is used to correct griping qualities and is very useful in curing flatulence and indigestion.
- *On basis of observations made in a clinical trial ,it can be concluded that ayurvedic drugs have shown encouraging results as prophylactic anti emetics when used as premedication to check/reduce the incidence of PONV. However, this was a very preliminary study and requires more comprehensive observation and assessment to reach the final conclusion for the drugs to be acceptable for prevention of PONV.*[9]

POST OPERATIVE PERIOD:-

- Complications of anesthesia are not uncommon since the origin of anaesthesia.Thus,minimising and treating complications is an important aspect in patient safety. The most common and distressing symptoms, which follow anaesthesia and surgery are pain and emesis.
- In post-op period, Ayurvedic remedies can provide useful and safer alternative to conventional modern drugs for pain. The cause of any pain in the body is due to vitiation of *vata(* **Ayurvedic concept**). *Pain is expressed with* various terms such as *soola, vedana, bhedana, soola, ruja, arti etc. Drugs indicated in* such conditions act as analgesics and relieve pain.

Acharya Charak has introduced three groups of analgesics useful for management of pain[10]*:-*

- *Angamarda prashaman- for mild pain*

- *Vedanasthapana - for moderate pain*
- *shoolaprashamana*- **severe forms of pain.**

Drugs having sweet (madhura), sour (amla) and saline(lavan) tastes with unctuous (*snigdha) and hot (ushna) qualities are preferred in the management of vata* vitiation.

1. **GROUP OF PLANTS TO TREAT BODY ACHES***(ANGAMARDAPRASHAMAN)*

S.NO.	Ayurvedic name	Botanical name
1.	*Vidarigandha*	*Desmodium gangeticum DC (Fabaceae)*
2.	*Prushniparni*	*Uraria picta Desv.(Fabaceae)*
3.	*Bruhati*	*Solanum indicum Linn. (Solanaceae)*
4.	*Kantakari*	*Solanum surattense Burm.f. (Solanaceae)*
5.	*Eranda*	*Ricinus communis Linn.(Euphorbiaceae)*
6.	*Chandana*	*Santalum album Linn.f. (Santalaceae)*
7.	*Ushira*	*Vetiveria ziznioides (Linn.) Nash (Poaceae)*
8.	*Ela*	*Elettaria cardamomum Maton. (Zingiberaceae)*
9.	*Madhuka*	*Madhuka indica J.F. Gmel. (Sapotaceae)*
10.	*Kakoli*	*Roscoea procera Wall. (Zingiberaceae)*

2. **ANALGESIC** *(VEDANASTHAPANA) GROUP OF PLANTS*

S. no.	Ayurvedic names	Botanical names
1.	*Sala*	*Shorea robusta.(Dipterocarpaceae)*
2.	*Katphala*	*Myrica esculanta Buch.-(Myricaceae)*
3.	*Kadamba*	*Anthocephalus cadamba Miq.(Rubiaceae)*
4.	*Padmaka*	*Prunus cerasoides D.Don (Rosaceae)*
5.	*Tumba*	*Lagenaria siceraria (Mol.)*(Cucurbitaceae)
6.	*Mochrasa*	*Bombex ceiba Linn. (Bombacaceae)*
7.	*Shirisha*	*Albizia lebbeck(Linn.) Benth.(Mimosaceae)*
8.	*Vanjula*	*Salix caprea Linn.(Salicaceae)*
9.	*Elavaluka*	*Prunus cerasus Linn.(Rosaceae)*
10.	*Ashoka*	*Saraca asoca (Roxb).(Caesalpincae)*

PLANTS FOR COLIC PAIN (*SHOOL PRASHAMANA*)

S. No.	Ayurvedic names	Botanical names
1.	*Pippali*	*Piper longum Linn.(Piperaceae)*
2.	*Pippalimoola*	*Piper longum Linn.(Piperaceae)*
3.	*Chavya*	*Piper chaba Hunter(Piperaceae)*
4.	*Chitraka*	*Plumbago zeylanica Linn. (Plumbaginaceae)*
5.	*Shrungvera*	*Zingiber officinale Rosc.(Zingiberaceae)*
6.	*Maricha*	*Piper nigrumLinn.(Piperaceae)*
7.	*Ajmoda*	*Apium graveolens Linn. (Umbelliferae)*
8.	*Ajagandha*	*Gynandropsis gynandra (Linn.) Briquet*
9.	*Ajaji*	*Nigella sativa Linn.(Ranunculaceae)*
10.	*Gandira*	*Achyranthus aquatica Br.(Amaranthaceae)*

4. GROUPS OF HERBS GIVEN BY *SUSHRUTA FOR VEDANA*[12]

S.No.	Ayurvedic names	Indications
1.	*Vidarigandhadi*	*Angamarda(Body ache)*
2.	*Aragwadhadi*	*Jwara(Fever)*
3.	*Varunadi*	*Shirashoola(Headache)*
4.	*Virtarvadi*	*Ruja(pain)*
5.	*Brihatyadi*	*Ruja(pain)*

Route of administration of analgesics (vedanahar dravya) in ayurveda are:

- **Oral-** (vati,kwath,aasav,arishta,choorna)
- **Rectal-**(anuvasan and asthapan vasti, gudvarti- suppository)
- **Nasal-** (nasya)

All the drugs indicated in the management of pain in Ayurvedic therapeutics should be categorized as *non-narcotic analgesics* as in Ayurvedic materia medica, opium is indicated in the management of *atisara but is not employed for the treatment of pain.*

Scientific evidences for Analgesic activity among Ayurvedic plants[13]:-

- *Boerhavia diffusa (Punarnava):* juice of fresh leaves of B.diffusa exhibits significant analgesic activity in animal(mice) model experiments.

- *Cedrus deodara (Devdaru):* At the dose level of 50 and 100 mg/kg body weight, the oil displayed against hot-plate reaction and acetic acid-induced writhing in mice

- *Cannabis sativa (Vijaya):* Cannabinoids have significant analgesic activity, especially for chronic pain states. Both tetrahydrocannabinol (THC) and Cannabidiol(CBD) are active. Several small clinical trials have shown that THC (and related analogues)can relieve post-operative pain, cancer pain, etc. Potency wise, THC proved 80 times more potent than aspirin and appears to be superior to codeine.

- *Celastrus paniculatas (Jyotismati):* At a dose level of 100 mg/kg (i.p.) it performed better than hydrocortisone

- *Crocus sativus (Kumkum):* Both aqueous and alcoholic extracts of stigma and petals of C. *sativus showed analgesic activity (i.p., mice, acetic acid- induced writhing)*

- *Desmodium gangeticum (Shalparni):* Aqueous extract of the herb showed pronounced analgesic activity in the acetic acid induced abdominal writhing assay in the test animals.

- *Eclipta alba (Bhringraj):* Hydro-alcoholic extract of E. alba, at 200 mg/kg inhibited ~ *50%* of acetic acid –induced writhing in mice, indicating a moderate analgesic action.

- *Embelia ribes (Vidang):* Embelin exhibits useful analgesic action in animal models but only via i.p. route. However its potassium salt is active orally and by other routes and the activity was comparable to that of morphine. The mechanism of action has been investigated and opiate receptors are considered to be involved.

- *Moringa oleifera (Shigru):* Alcoholic extract of M.oleifera root bark showed analgesic activity.

- *Ocimum santum (Tulsi):* Alcoholic extract of the leaves of O. santum (50,100 mg/kg, i.p.; 50,100,200 mg/kg, p.o.) showed analgesic activity against glacial acetic acid-induced writhing test in mice.

- *Phyllanthus fraternus (Bhumyamalki) .:* hydroalcoholic extract of the P.niruri, given intraperitonially(1-30 mg/kg) or orally (25-200 mg/kg) caused marked dose-dependent analgesic effect on capsaicin- induced pain in mice.

- *Tinospora cordifolia (Guduchi):* Aqueous extract of plant stems has been shown to exhibit analgesic and antipyretic action in rats. The extract at a dose of 500 mg/kg (oral) significantly inhibited acute inflammatory response evoked by carageenan

- A proper analysis of the evidence based activity of the herbs indicate that; *Punarnava, Vijaya, Devdaru, Jyotismati, Kumkum, Karchur, Shalparni, Bhringraj, Vidang, Shigru, Upkunchika, Tulsi, Bhumyamalki, Vibhitak, Guduchi, Nirgundi have been found to possess* significant experimental evidences for their analgesic activity.

- The herbs namely; *Dasmoola, Bala,Punarnava, Guduchi, Palasha, Badara, Kulatha, Katruna, Eranda and Rasna are* bestowed with *vatahara property and are incorporated in various prescriptions for the* management of painful conditions.

A considerable number of herbal constituents whose analgesic effects and pharmacological actions have been well characterized may be good candidates for further investigations that may ultimately result in clinical use. The investigation of a large portion of the herbal extracts and herbal mixtures is in its infancy. Herbal remedies that have demonstrable analgesic,anti-emetic and anxiolytic activities deserve increased attention in future studies.A considerable number of herbal constituents whose analgesic effects and pharmacological actions have been well characterized may be good candidates for further investigations that may ultimately result in clinical use. The investigation of a large portion of the herbal extracts and herbal mixtures is in its infancy. Herbal remedies that have demonstrable analgesic, anti-emetic and anxiolytic activities deserve increased attention in future studies.

Conclusion:-

Humanity has been toiling hard to conquer various ailments since the dawn of human civilization. In this regard, *Ayurveda*, the very foundation of Indian system of medicine has proved to be an exciting prospect by combating the ailments and disorders effectively and that too, in a safe manner. *A collaborate effort of ayurvedic experts is needed for making this potential contribution of Ayurveda really count.*

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Standardization of Agni Karma Shalaka

***Dr P.K.Bharti **Prof. D.N.Pande.**

Abstract: In Ayurvedic Text different type of modalities are described for the treatment of various type of Sandhigata Vata Roga such as Bheshaja Karma, Agni karma, Shastra Krma , Raktamokshana and Basti Chikitsa.

Acharya Susruta mentioned Aganikarma Chikitsa in context of different type of diseases like Arsha, Arbuda, Bhagandar, Sira Snayu- Asthi- Sandhigata Vata Roga, Vridhi, Gridashi.different type of Siro Roga, Kshudra Roga etc.

Acharya Sushruta mentioned the Shalaka Yantra for cauterization of skin and Astanga Sangraha bears the view that Shalaka can be used for Mansa Daha, Twak-Daha and Sira-Daha. These Shalakas are made of iron, silver, gold, copper and bronze. At present scenario standerization of these Shalaka are needed.

Key Word: Sandhigata Vata, therapeutic burns, standardize, Thermocouple.

Standerization of Shalaka : Dahanopakarana are various accessories e.g. drugs, articles and substances used to produce therapeutic burns (sayak dagdha) during Agni Karma Chikitsa.

Different type of materials used for Aganikarma chikitsa could be classified as - Vanaspatija- Pippali, (Pipper Longum) ,Yasht`imadhu (Glycerrhiza Glabra Linn.) , Haridraa (Curcuma longa), Gud`a,(jaggery) Sneha Taila, Sarjarasa (herbal).

Praan`ija - Ajas`hakrit, Godanta, Madhoochchhisht`a (animal-origin) Metallic and others- **Panchadhaatu (Gold, Silver, Copper, Iron and Brass)** - S`hara Shalaaka, Jambavausht`ha, Sooryakaanta, Soochi, and Stone . Sushruta mentioned the Shalaka Yantra for cauterization of skin and Astanga Sangraha bears the view that Shalaka can be used for Mansa Daha, Twak-Daha and Sira-Daha.

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These Shalakas should be made of iron, silver, gold, copper and bronze. Charaka has advised to use iron Shalaka in Visarpa and Gold in Granthi Visarpa.Chakradutta used Shalaka made up of iron and gold in Pakshma kopa.

Ardhendu Vakra Shalaka – The tip of this Shalaka is semilunar in shape and used for Daha Karma in Vriddhi.

Kolasthi Shalaka – This is described by Vagabhatta and Sushruta. The tip of this Shalka has the shape of half of the seed of Badara.

Now a day's various types of Shalaka which is made up of different type of elements are used for pain management and its result is satisfactory.

In modern medicine, the different types of joint pain disease managed only with potent analgesics or some sort of surgical interventions which have their own limitations and adverse effects.

The present study will be focused to standardize the different tools of Agnikarma specially Lauh prepration as like Couper,Silver, Iron, Zinc and Tin and Panchadhatu shalaka.with the help of IIT BHU,Varanasi.

Standardization is the process of developing and implementing technical standards. Standardization can help to maximize compatibility, interoperability, safety, repeatability, or quality. It can also facilitate commoditization of formerly custom processes.

Without standardization we will not described each step of process scientifically

Instrument used for assessment for red hot temp.& loses within 30 sec.:-

1. Furnace.
2. Thermocouple.
3. Voltmeter or Tester.
4. LPG gas stove.
5. Spirit lamp
6. Different type of Shalaka
7. Needle Holder.

Theory implement for assessment of temperature:-

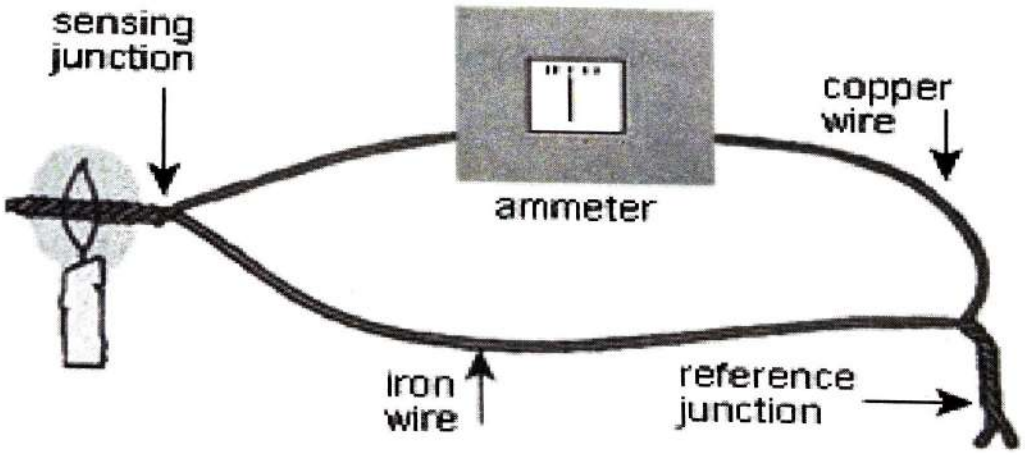
Newton's Law of Cooling is used to model the temperature change of an object of some temperature placed in an environment of a different temperature. The law states that

$dT/dt=K(T-R)$ where T is the temperature of the object at time t, R is the temperature of the surrounding environment (constant) and k is a constant of proportionality. What this law says is that the rate of change of temperature is proportional to the difference between the temperature of the object and that of the surrounding environment.

Thermocouple:-One of the most frequently used temperature sensors is the thermocouple. Thermocouples are rugged, inexpensive devices that operate over a wide temperature range. They are created whenever two dissimilar metals touch and the contact point produces a small open-circuit voltage as a function of temperature. This thermoelectric voltage is known as the Seebeck voltage, named after Thomas Seebeck, who discovered it in 1821. The voltage is nonlinear with respect to temperature.

Principle of operation :-In 1821, the German–Estonian physicist Thomas Johann Seebeck discovered that when any conductor is subjected to a thermal gradient, it will generate a voltage. This is now known as the thermoelectric effect or Seebeck effect. Any attempt to measure this voltage necessarily involves connecting another conductor to the "hot" end. This additional conductor will then also experience the temperature gradient, and develop a voltage of its own which will oppose the original.

Fortunately, the magnitude of the effect depends on the metal in use. Using a dissimilar metal to complete the circuit creates a circuit in which the two legs generate different voltages, leaving a small difference in voltage available for measurement. That difference increases with temperature, and is between 1 and 70 microvolt's per degree Celsius (μV/°C) for standard metal combinations.



Different type of Thermocouple & its temp. range :-

Thermocouple Type	No. 8 Gauge °F (°C)	No. 14 Gauge °F (°C)	No. 20 Gauge °F (°C)	No. 24 Gauge °F (°C)	No. 28 Gauge °F (°C)
E	1600 (870)	1200 (650)	1000 (540)	800 (430)	800 (430)
J	1400 (760)	1100 (590)	900 (480)	700 (370)	700 (370)
K and N	2300 (1260)	2000 (1190)	1800 (980)	1600 (870)	1600 (870)
R and S				2700 (1480)	
T		700 (370)	500 (260)	400 (200)	400 (200)

Type K Thermocouple temp. Range:-

Thermocouple devices must use the appropriate wire because different wires measure various temperature ranges. Type K is popular because of its wide temperature range. Of the four major thermocouple types, type K covers the widest range from−200°C to 1,260°C (approximately minus 328°F to 2,300° F).
The next edition I will describe Red hot temperature of the different shalaka and temp.looses within 30 seconds.

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To Study The Efficacy of Jalaukavacharana and DhanvantarGhritaVranabasti with Chandraprabhavati in the management of PramehPidika w.s.r. to diabetic foot

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INTRODUCTION: Diabetic foot ulcers (DFUs) are estimated to occur in 15% of all patients with diabetes and precede 84% of all diabetes-related lower-leg amputations. The triad of peripheral neuropathy, peripheral arterial disease and infection is responsible for foot problem. This triad leads to the final event of gangrene and amputation. Despite the existence of protocols to standardize care, the physiological impairments that can result in a DFU complicate the healing process. The challenge is to get these patients back on their feet.

It was thought before; the treatment is mainly due to the fact that the leech sucks "Impure Blood". Indeed the leech sucks 3 to 5 cubic centimetres of blood. Medical leech injects in to the body in one session over a hundred bioactive drugs. They have anti-inflammatory effects and stimulate the local blood capillary blood circulation, improves the supply the tissues with oxygen and nutrients, prevent blood clots and dissolve fresh thrombi. There is every reason to call a leech 'pharmaceutical mini factory'

Today the method hirudotherapy someone may seem outdated, someone exotic. It's no secret that most of us are accustomed to using medications. Leeches many shortsighted citizens will cause distrust and rejection: "Br-rrr,a hideous creature!" of course, all this prejudice. Another reason for the low prevalence of this method today is that the number of medicinal leeches in, alas, has declined sharply. Medical leeches are listed as endangered, which, unfortunately, does not save them from destruction.

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According to Yogaratnakara, Chandraprabha Vati is mentioned under Prameh and PramehPidika Rogadhikar.In Chandraprabha Vati formulation, the main ingredients are Pimpali, Haritaki, Pimpalimula, Chavya, Chitrak Mula, YavaKshar, Vidanga, Ardraka, Haridra, Aamalaki, Maricha, Shilajit, Guggulu, Swarnamakshik Bhasma, Loha Bhasma etc. Almost all of these drugs having property of Deepana, Pachana, Vatanulomana, Ushna Guna hence Shulaprashamana effect. Few drugs of Chandraprabha Vati have special effect as a Rasayana, Bruhana, Ojavardhaka which acts as a immune modulator which is necessary to breakdown the pathogenesis of diabetic foot ulcer.

Charakacharya mentioned most of the ingredients in Deepaniya, Pramehghna and Shulaprashamana Gana while Sushrutacharya explained in Pippalyadi Gana which acts as Deepana, Pachana, Vatanuloman, Shulaprashaman, Kaphaghna. Chandraprabha Vati formulation fulfill all the parameters in the management of diabetic foot ulcer i.e. pain local temperature tenderness, induration, edema, discharge, colour, smell, slough, secondary infection, improving digestion, good appetizer and promotes wound healing.

In this way Chandraprabha Vati formulation in the management of diabetic foot ulcer acts as a multi-dimensional approach by providing relief from symptoms in the patients suffering from diabetic foot ulcer.

Ingredients of *Dhanvantar Ghrit* drugs are having Katu, *Tikta, Kashya Rasa, Ruksha, Tikshna Guna and Ushna Veerya*, so these drugs are very effective to break the pathogenesis of *Prameh Pidika(diabetic foot ulcer)*as well by Virtue of these properties Dhanvantar Ghrit simultaneously acts as a Shodhan, Lekhan, Krimighna. Among the ingredients of Dhanvantar Ghrit Ushira, Haritaki, Badara, Lodhra, are Kashaya Rasatmak and in Ayurveda Kashaya Rasa explain as a Ropana which known as wound healing promoter and Ropana.

AIMS & OBJECTIVES:

1. To study the etiological factors of diabetic foot in the influence of Ayurvedic and modern parameters.
2. To study the pathogenesis of diabetic foot w.s.r. to Prameh Pidika in the influence of Ayurvedic and modern parameters.
3. To study the efficacy of Jalaukavacharan with Chandraprabha Vati as oral medication in the management of Diabetic Foot w.s.r. to PramehaPidika.
4. To study the efficacy of Dhanvantari Ghrita VranaBasti with Chandraprabha Vati as oral medication in the management of Diabetic Foot w.s.r. to PramehaPidika.

MATERIALS AND METHODS

The following methodology was adopted to conduct the study –

Clinical Study –

a) Study design - Clinical study

b) Selection of Patients -The study was carried out on outdoor patients (OPD) and wards (IPD) patients.

Inclusion Criteria -

Those patients presenting with the clinical features like:

1. Patients b/w 16 to 70 yrs. of age
2. Patients with normal bleeding and clotting time.
3. Patients with h/o Diabetes Mellitus
4. Patient having diabetic foot

Exclusion criteria –

Those patients presenting with the clinical features like:

1. Patients below 16yrs. and above 70 yrs. of age
2. Patients with multi organ failure.
3. Patients with tubercular infection
4. Patients under malnutrition
5. Patients with HIV infection
6. Patients presenting with gangrene
7. Patients with malignancy

c) Investigations:

As required for physical fitness. e.g.:

Hb % , Total Count, ESR,LFT,BT, CT,HIV,HBsAg,BSL

d) Place of work:

ShalyaTantra Department,

e) Informed Consent: -

The subject undergoing this study was informed about the nature & purpose of study and written consent for each patient in both groups was taken.

f) Materials (Drugs):-

1) Jalauka.
2) DhanvantarGhrita.
3) ChandraprabhaVati.

METHODS:-

Study Group:-60 patients were observed & treated [two groups of 30 patients each]

Group A: - [Experimental Group]30 patients will be given the treatment with Jalauka and Chandraprabhavati

Group B: - [Control Group]30 patients will be treated with DhanvantariGhritaVranaBasti and Chandraprabhavati.

Mode of Administration –A). Table no.1.1

Groups	**(Group A) Experimental Group Jalaukacharan and ChandraprabhaVati**	
Dose (matra)	for 30-45	500mg, 1 tab, TDS
Duration	56 day's	56 day's
Route Of administration	Local	Oral (abhyantar)
Kala	8 weeks	After meals

Jalauka Procedure.

Clinically Jalauka procedure has been done infoliowing method.

Instrument

Leech, Kideny tray,Haridra powder, Cotton, Needle, Gause pad, Saindhava lawana, Bandage, Glove, Spatika Churna,

Pre-Procedure

1. Inj. *T.T. was given as a prophylaxis.*
2. *Jalauka was with a clean water mix with Haridra powder.*
3. *A ulcer was clean with* normal saline.
4. Ulcer was rubbing with the help of gauze.
5. Jalauka sucker end was held in operating hand and place near the ulcer.
6. After a few min Jalauka suck the blood from the ulcer and observe active peristalsis movement for conformation.
7. After that a weight gauze placed on body over the jalauka, and poring of water on the gauze. To achieve the actively sucking by the Jalauka.
8. In this way Jalauka will suck the approximately 30 to 45 min.
9. After specific time Jalauka was hold down from the ulcer or sometime Jalauka was released with the help of dusting of Haridra powder over the Jalauka sucker end.

Post Procedure

1. With the glove hand Samyak Vamana of Jalauka was done with Haridra powder and Saindhava Lavana in kidney tray.
2. After proper Samak Vamana of Jalauka was kept in a clean water container and obser activeness of Jalauka. That was conformation of Samak Vamana.
3. And ulcer was dressed with Spatika churna. Followed by 4 to 5 cotton pads and compression bandage given with roller bandage to achieved haemostasis.
4. Patient was instructed elevation of limb for 4hr and instructed soakage of bandage with blood the call for nursing care.

The above procedure of Jalauka charan was repeated for the every patient in every group 'A'. After 7 day for 2 month.

Table no.1.2B).

Groups	**(Group B)** **Control Group** **DhanvantariGhrita and ChandraprabhaVati**	
Dose (matra)	for 35-40 min.	500mg, 1 tab, TDS
Duration	56 day's	56 day's
Route Of administration	Local Oral (abhyantar)	
Kala	daily	After meals

Dhanvantar Ghrita Vrana Basti

1. An ulcer was wash with normal saline.
2. With the help of black gram powder making of Pali was done. Upto 2 to 3cm height in the surrounding of ulcer.
3. After that luck warm Dhanvantar Ghrita produced into Pali approximately quantity Dhanvantar Ghrita was 50 to 100 ml, which may be variable according to size of ulcer.
4. In this way Dhanvantar Ghrita Vrana Basti was given to the patient upto the 30 min.
5. After completion of the Varana Basti time Ghrita will be collected in the container and ulcer was dressed with simple cotton pad and roller bandaging done.
6. In this way Dhanvantar Ghrita Vrana Basti was given to every patient in group 'B' for 2 month.

Follow up

Each patient was followed after every 7 days. Initially all the sign and symptoms were noted thoroughly. Change in the sign and symptoms in each follow up were observed and noted neatly in the case paper.

Dietary advice:

The patients were asked to follow the advice regarding Pathya and Apathya. (Diabetic Diet)

Management of patient:

A large number of patients suffering from Diabetic Foot (PramehaPidika) have been reported in regular Shalya-Tantra O.P.D. These patients bailed from various socioeconomic group as well as varied age groups. In each visit, patient was thoroughly examines for pulse rate, blood pressure, systemic examinations and local wound examination.

Clinical assessment:

The changes observed in signs and symptoms were assessed by adopting suitable scoring methods and the objective signs by using appropriate clinical tools.

OBSERVATION AND RESULT

For the present study entitled "To Study The Efficacy of Jalaukavcharan and DhanvantarGhritaVranabasti with Chandraprabhavati in the management of PramehPidika w.s.r. to diabetic foot.", 60 patients are randomly selected in OPD of ShalyaTantra department. The observations are done on the basis of general examination, systemic and local examination of the patients. The data collected according to age, sex, occupation, religion, personal habits, signs & symptoms etc. are analysed and recorded for observation and result

Table No 1.3 Effect of Therapy on Cardinal Symptoms of Pramehapitika in Group A

Cardinal Symptoms	N	Mean B.T.	Mean A.T.	S.D.	S.E.	't' cal.	p value	Result	% Of Relief
Pain	30	03	0.4	0.56	0.102	25.49	P<0.001	H.S	86%
Local Temprature	30	02	0.16	0.37	0.07	2.28	P<0.05	N.S.	91.66%
Tenderness	30	04	0.8	0.53	0.096	32.91	P<0.001	H.S	80%
Induration	30	03	0.33	0.47	0.087	30.57	P<0.001	H.S	88.89%
Edema	30	03	0.3	0.46	0.085	31.76	P<0.001	H.S	90%
Discharge	30	03	0.46	1.003	0.183	13.08	P<0.001	H.S	84.45%
Color	30	03	0.43	0.67	0.124	20.70	P<0.01	H.S	85.56%
Smell	30	01	0.1	0.30	0.05	16.36	P<0.001	H.S	90%
Diamensions	30	2.96	0.93	0.41	0.075	26.67	P<0.01	H.S	68.53%
Progress	30	03	0.13	0.34	0.063	45.39	P<0.001	H.S	95.56%

Table No 1.4 Effect of Therapy on Cardinal Symptoms of Pramehapitika in Group B

Cardinal Symptoms	N	Mean B.T.	Mean A.T.	S.D.	S.E.	't' cal.	p value	Result	% Of Relief
Pain	30	03	0.73	0.52	0.095	23.78	P<0.001	H.S	75.56%
Local Temprature	30	02	0.56	0.56	0.103	13.85	P<0.001	H.S.	71.67%
Tenderness	30	04	0.93	0.69	0.126	24.20	P<0.001	H.S	76.67%
Induration	30	03	0.73	0.63	0.116	19.33	P<0.001	H.S	75.56%
Edema	30	03	0.73	0.66	0.121	18.57	P<0.001	H.S	75.56%
Discharge	30	03	0.76	0.77	0.1414	15.77	P<0.001	H.S	74.45%
Color	30	03	0.76	0.62	0.11	19.49	P<0.01	H.S	74.45%
Smell	30	01	0.23	0.43	0.07	9.66	P<0.001	H.S	76%
Diamensions	30	03	1.5	0.50	0.090	16.14	P<0.01	H.S	50%
Progress	30	03	0.7	0.79	0.145	15.84	P<0.001	H.S	76.67%

OVERALL EFFECT OF THERAPY

Table No 1.5 Overall effect of Therapy in Group A

Effect	No of Pt.	Percentage (%)
Cured	29	96.66
Markedly Improved	01	3.33
Improved	00	00
Incurable	00	00

Table No 1.6 Overall effect of Therapy in Group B

Effect	No of Pt.	Percentage (%)
Cured	14	46.66
Markedly Improved	15	50
Improved	01	3.33
Incurable	00	00

Discussion & CONCLUSION

Depending on the observations obtained and detailed discussion on this observation, following conclusion can be drawn

Tissue oxygenation is a prerequisite for successful wound healing due to the increased demand for reparative processes.

Jalaukavacharana is having microcirculation restoration effect in diabetic foot ulcer along with the help of internal administration of Chandraprabha Vati.

Chandraprabha Vati exibit potent hepato-protective action which results in normalisation of body metabolism which is necessory to breakdown the pathogenesis of diabetic foot ulcer.

Chandraprabha Vati formulation fulfill all the parameters in the management of diabetic foot ulcer by promoting wound healing

Dhanvantar Ghrit drugs are very effective to break the pathogenesis of PramehPidika(diabetic foot ulcer) as well by Virtue of these propertiesDhanvantar Ghrit simultaneously acts as a Shodhan and Ropana.

DhanvantarGhrita and Chandraprabha Vatihas a healing effect on diabetic foot ulcer, but comparatively low due its incapability.

Jalaukavacharana increases microcirculation and hence tissue oxygenation by formation of new capillaries.

Controlled Diabetes is an important factor for the healing of ulcer

Diabetic control was obtained in patients by internal administration of Chandraprabha Vati along with other medicines taking already by patient and by the strict Pathya.

The Experimental group is having a better result in comparison with Control group, where the internal administration of Chandraprabha Vati and application of Dhanvantar Ghrita Vranabasti with Chandraprabha Vati alone is tried.

Controlling diabetes is also an important factor for the healing of ulcer. This was obtained in patients by internal administration of Chandraprabha Vati , along with other medicines taken already by patient for diabetic control and strict Pathya.

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Concept of SnehanChikitsa in Children: A Scientific Approach

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Abstract: In today's hectic routine and unhealthy lifestyle, it gets hard to maintain balance between one's health and mental well-being. Ayurveda comes across as a **therapeutic healing science** that uses natural herbs and traditional techniques to balance the *doshas* (Vata, Pitta, Kapha) and eradicate disorders causing toxins from the body.InAyurvedic system, there are several therapies that work towards **cleansing the body** and system from all sorts of stress and depression causing toxins in a healthy manner. Most of the **allopathic treatments often result in side effects** or **temporary results** but Ayurvedic medicine causes on all aspects behind one's stress levels and applies multiple treatments in a natural way to remove the root cause, thus giving a **long-lasting** and **harmless** result.

In Ayurveda, **Panchkarma** (Literally translated to 'five actions') is a method with which the body is detoxified by **flushing out toxins** from every part, every cell and organ of the body, thus allowing no space for any related disorder.Sneha working as vehicle which transport the Drugs, on Oil massage oil and drugs absorb trans-dermally also makes the superficial and deep tissues soft and healthy, thus helping to remove stress and to nourish the nervous system by providing nutrition to peripheral nerves.

Key Wards: Panchkarma, *Tridoshas,* Snehana, Abhyanga, shodhana.

Introduction: Most of the chronic diseases can be cured by using *Panchakarma therapy*. In Ayurvedic system, medicines are indicated for two purposes likepreservation of health of healthy persons as well as prevention& cure of diseases .there are two types oftreatment, described in Ayurveda -

1. **ShamanaChikitsa** (medication for suppression of Dosas)
2. **ShodhanaChikitsa** (medication for internalpurification/elimination of Dosas)

Panchakarma is of shodhana type of treatment . There are so many subtypes of this therapy such as different types of fomentation's with steam, external oil massage, Basti (medicated enemas), Virechana (medicated purgatives), Vamana (medicated herbal emitics), Nasya (medicated herbal nasal drops) etc. have described . These practices are extremely helpful in relieving deep seated diseases as well as being beneficial for maintaining and improving physical and mental health.

Trividh Karma:

त्रिविधंकर्म–पूर्वकर्म, प्रधानकर्म, पश्चात्कर्मेति।। (सु0सू0 5/3)

*In*Ayurvedic system of medicine a surgical or medical procedure is performed into three steps.

1.Poorvakarma (preparatory measures)

2.Pradhan karma (Chief therapeutic measures)

3.Pashchatkarma(posttherapeuticmeasures).

In medical treatmentthese three steps are defined as:

चयादीनांपूर्वरुपान्तानामातत्रेत्पत्तेः प्राक् यत् क्रियतेतत्पूर्वकर्म, आतंकोत्पत्तौतु यत् तत् प्रधानंकर्मनिवृत्तातंकस्य अनुबन्धोपचरणाय यत् तत् पश्चात्कर्म।

The measures taken before the manifestation of disease i.e.from the stage of accumulation to premonitory symptoms is preparatory measure and whatever is done to eradicate disease on manifestation of disease is chief therapeutic measure while measures that performed after recovery to eliminate the subsequent impurities is post therapeutic measures.

Poorvakarma In relation to panchakarma includes:-Pachan, Snehan&Swedan.**Pachan:**

पचत्यामं न वहिनं च कुर्याद्यत्तद्धि पाचनम् ।नागकेशरवाद्। (शा04/2)

The measures (drugs)adopted to digest the *Ama* but do not enhances the*Jatharagni* are known as*Pachanfor example drug likeNagkeshar.*

Snehan is defined as :

स्नेहनंस्नेहविष्यन्दमार्दवम् क्लेदकारकम्।। (च0सू0 22/11)

Snehan is that which produces unction, oozing, softness and moistening.

Snehana is of two types, External snehan(Abhyanga/Massage) Internal snehan, Oil is applied to the entire body with a particular type of massage which helps the toxins to move towards the gastro-intestinal tract.Sneha working as vehicle which transport the Drugs, on Oil massage oil and drugs absorb trans-dermally also makes the superficial and deep tissues soft and healthy, thus helping to remove stress and to nourish the nervous system. As per indication Snehana is given daily for three to seven days.

Types of snehas-ChaturvidhaSneha- Ghrita, Taila, Vasa &Majja .

ChaturvidhaSneha obtained from two Sources (origin), Tail obtained from vegetablesource while Ghrit, Vasa and Majjais obtained from animal sources.

Among tailTil Tail is best for strength and unction (snehan) while castor oil is best for purgation.*Su.su.45/130*

The chaturvidhasneha are the most important ones because of the excellence in their unctuous qualities, ghee is the unctuous substance. This is because ghee has a remarkable property to assimilate the properties of other substances when added to it. In other words, ghee has the capacity to transform itself so as to imbibe all the qualities of the substances added to it.

Oil does not only assimilate the substance added to it but also it sacrifices its own properties.

Properties of chaturvidhasnehas-
Properties of Ghrita:
घृतंपित्तानिलहरंरसशुक्रौजसांहितं ।निर्वापणंमृदुकरंस्वरवर्णप्रसादनम् ।। (ch.sha.13/14)Ghee alleviates pitta and vata , it is conducive to rasa dhatu, shukradhatu and ojas. It has cooling and softening effect upon the body. It adds to the clarity of the voice and complexion.
Properties of Tail:

मारुतघ्नंन च श्लेष्मवर्धनम् ।त्वच्यमुष्णंस्थिरकरंतैलं योनिविशोधनम् ।। (च0सू0 13/15) Oil alleviates vata. It does not, however aggravate kapha. It promotes body strength. It is beneficial for the skin .it is hot, stabilizer and it controls the morbidity of the female genital organs.
Properties of Vasa (Fat):
विद्धभग्नाहतभ्रष्टयोनिकर्नशिरोरुजि ।पौरुषोपचयेस्नेहेव्यायामेचेष्यतेवसा ।। (च0 सू0 13/16)
The muscle fat is prescribed for the treatment of injury , fracture, trauma, prolapsed uterus , earache and headache. It enhances the virility of a person. It helps in oleation and it is useful for those who practice physical exercises.

Properties of **Majja:**

बलशुक्ररसश्लेष्ममेदोमज्जविवर्धनः।मज्जाविशेषतोऽस्थ्नांचबलकृ स्नेहनेहितः।। (ch.sha.13/17)
The bone marrow enhances, strength, shukra, rasa dhatu, kapha, medodhatu and majja. It adds to the physical strength, especially of the bones and is useful for oleation.

SnehapanKala(Suitable time of Snehapan)

सर्पि शरदिपातव्यंवसामज्जा च माधवे।तैलंप्रावृषिनात्युष्णशीतेस्नेहंपिवेन्नरः।।(ch.sha.13/18)
Ghee should be taken in autumn (sharad), Vasa and Majja in spring and oil in early rains (pravrit). One should not take uncting substance in too hot or too coldweather. *Ghee* is to be taken during autumn because *Pitta* gets aggravated in this season and ghee is considered best foraggravated *Pitta* out of *ChaturvidhaSneha.*

वातपित्ताधिकोराजावृष्णेचापिपिबेन्नरः।श्लेष्माधिकोदिवा तितेपिबेच्चामलभास्करे।।(ch.sha.13/19)

In the event of the vitiation of vata andpitta, and during the summer in general, snehantherapy should be administered in the evening, whileWhenkapha is vitiated and in the winter in general, this therapy is to be administered in the mid-day.

Anupanaforchaturvidhasnehas-

जलमुष्णं घृतंपेयं यूषस्तैलेऽनु शस्यते।वसामज्ज्ञोस्तुमण्डः स्यात् सर्वेषु उष्णमथम्बु वा।।(च0 सू0 13/22)

Ghee is to be taken with the *Anupana* of hot water, oil with *Yusha*, muscle fat and bone marrow with *Manda.* or all these unctuous substances may be taken with the *Anupana*of hot water. *Snehan is advisedminimum* for three days *and maximum*for seven days.

Property of SamyakSnigdha:

वातानुलोम्यंदीप्तोऽग्निर्वर्चः
स्निग्धमसंहतम् ।मार्दवंस्निग्धताचा ैस्निग्धानामुपजायते।।(ch.sha.13/48) Unctuous and unformed stool, softness of body parts, Carmination, stimulated digestion, these are property of samyaksnigdha.

PREOLEATION MANAGEMENT:

One day before to the administration of snehan therapy, one should take pathya diet in proper quantity. The diet should be liquid, Luke worm and anabhishyandi. It should neither be unctuous nor a mixture of pathya diet having opposite property.

MANAGEMENT DURING OLEATION:

While under the snehan therapy one should use Luke worm water, followbrahmacharya, should not sleep during day time, should not suppress urges for fecal matter, urination, flatus, etc. and one should avoid physical exercise, loud speech, anger anxiety, extreme cold and sun, and one should lie down or sit in a place well protected from the direct flow of wind.

POST COMPLICATION MANAGEMENT: The snehan therapy gives rise to many complications in following condition, if it is administered at inappropriate time or it is not taken in proper dose, taken in excess or followed by improper regimen.

If snehan is not adimistered properly, drowsiness , nausea, acute constipation, fever, stiffness, unconsciousness, skin diseases, pruritis, paleness, oedema, piles, anorexia, thirst, abdominal diseases suppression of speech and colic pain may appear.

Complications arising due to inappropriate snehan,can be manage by the intake of takrarishta andtriphala.

Steps of SnehanChikitsa:

snehan therapy is required to be administered first; then swedan therapy is to be applied; finally elimination therapy is to be administered after the administration of snehan and swedan.

Purgation is to be administered three days after completion of snehan therapy. During the interval of three days, the patient should take unctuous liquid and Luke worm porridge together with meat juice.

The emesis is to be administered one day after the completion of oleation therapy. The food prescribed during interval of one day is the same as indicated in the preceding verse.

Conclusion: Oil is applied to the entire body with a particular type of massage which helps the toxins to move towards the gastro-intestinal tract. Sneha working as vehicle which transport the Drugs, on Oil massage oil and drugs absorb trans-dermally also makes the superficial and deep tissues soft and healthy, thus helping to remove stress and to nourish the nervous system by providing nutrition to peripheral nerves. It also nourishes to muscular and vascular tissues. Child below the age of 12 year are not suitable for therapy except abhanga, massage and selected form of Basti9medicated enemas), soft gentle massage with medicated oil is always useful for children of all age groups.

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Guggulu: A Review in Ayurved

***Dr. B.N. Maurya,** ****Dr. D.N. Pande**

Botanical name	-	*Commiphora mukul* (Hook ex Stocks)
		Sym Commiphora wightii (Arnolt)
Family	-	Burseraceae
Order	-	Polypetally
Genus	-	Commiphora
Species	-	mukul
Gana	-	Sushruta – Eladi Gana

Synonyms and Vernacular Names:

Sanskrit	-	Bhutaharh, Devadhupa, Deveshtah, Guggulah, Kalaniryasah, Kaushik, Marudesya, Mahishakshah, Nisacharah, Purah, Pulamkashah, Rakshoha, Rukshagandhak, Sambhavah, Sivah, Sivadhupa, Ulukhalah
English	-	Indian bedillium, Balsamodendron roxburghi (Stocks)
Hindi	-	Gugal, Guggul
Bengali	-	Gugglu, Mukul
Gujarati	-	Gugara
Telugu	-	Maishokshi

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Distribution:

In the arid rocky track of Rajasthan, Andhra Pradesh, Madhya Pradesh, Karnataka and Baluchistan.

Plant Description:

It is shrub, crooked, spiny, brown branches. Leaflet 1-3, rhomboid-ovate, serrate. Flower in fascicles of 2-3 brownish red. Stamens are 8-10, alternately long and short and half the length of the petals. Ovary is oblong, ovoid. Fruit is a drupe, red, and 6-8 mm in diameters. Cut surface of plants secretes olio resin is collected and known as gum guggulu.

Types of Guggulu:

Mahishaksha Guggulu	–	(colour of Bhramara or Antimony) mainly used in elephants, sometimes for human beings.
Mahaneel Guggulu	–	(Blue colour) used in elephant.
Kumud Guggulu	–	(Kumudani colour) for horses.
Padma guggulu	–	(Shines like Ruby) for horses.
Hiranya Guggulu	–	(Shines like gold) useful for human beings.

Varieties based on Duration:

New guggulu	–	It is Bringhana, Snigdha and Vajikaran
Old guggulu	–	It is shuksha and lekhan.

Chemical Constituents:

Guggulu is the oleogum exudate from the tree obtained by incision of bark. Commercial product contains about 4.65% foreign organic matter, 1.54% aromatic essential oil, 32.3% gum, 58% resin with mineral matter like ZiO_2, MgO, and Al2O3 etc.

Gum Resin - It contains guggulsterones Z and E, guggulusterds I – V (Ind. J. Chem., 1979) two disterpenoids, a terpene hydrocarbon named – cembrene, a diterprine alcohol and mukulol, □-comphrone and cembrene (Arch. Pharm., 1972).

Major components from essential oil of gum resin are myrane and dimyrane (J. Indian Chem. Soc., 1950). The plant without fruits, flower leaves contains myricyl alcohol, □-sistosterol and fifteen aminoacids (Plants J. Scient. Ind. Res. 1967).

Flowers – contains Quercetia and its glycosides and major flavonoids components, other constituents being Ellagic and pelagonidin glucoside (Fitoterapia, 1981).

Parts used - Resinous gum. It is the pale yellow or brown aromatic gum resin obtained from bark. The gum resin consists of irregular roundish masses of varying size. It is opaque when dry.

Properties

Rasa	-	Tikta, Katu, Madhura, Kasaya
Guna	-	Laghu, Tikshna, Snigdha, Pichhila, Sukshma, Sara
Virya	-	Usna
Vipaka	-	Katu
Prabhava	-	Tridoshahara

Pharmacological Actions and Uses:

The drug has been used with the Shilajatu, Gomutra, Madhu, Shyama along with cow's urine for effective control of sthaulya roga. The drug is also effective in controlling inflammation and oedema.

The drug is also used for wound healing as described in Chikitsa Kalpa. It alleviates all disorders of Meda, Kapha and vata.

Pharmacological and Clinical Studies:

Anti-inflammatory and antipyretic activitie of C. Mukula was evaluated by using extract of plant and it was found that it reduces pyrogen induced fever and inhibited inflammatory processes. (N. Bachouse, A. Pinto *et al.*, International Jour. of Pharmacognosy, 1998).

Gum resin of C. Mukul called Guggulu. Its crude form as well as its fractions and pure constituents revealed significant anti-inflammatory, antirheumatic and hypocholesteremic activity. *Balasmodendron mukul* was studied for use in inflammatory and degenerative arthritis and it was proven that it is beneficial in various inflammatory conditions and free from adverse effects even after prolong use (Dharma Rao *et al.*, Antiseptic, 1999).

Its active constituent Guggulusterol I, II and III is major component of Navakaguggulu. It has a significant effect in rheumatoid arthritis (Wanger and Walff).

Hypolipidemic effect was evaluated experimentally on estrogen induced hyperlipidemia in chicks (J. Res. Indian Med., 1974).

It is an effective as hypolipidemic and hypocholesteremic activity (J. Res. Indian Medicine, 1976).

It is found to be the inhibitor of platelet aggregation (Planta Med., 1979).

It also increases serum fibrinolytic activity and decreases platelet adhesive index in human beings (Indian J. Med. Res., 1979).

The drug has given a significant response in atherosclerotic disorders like coronary insufficiency (Rheumatism). Its compound Guggulupid is found to be useful in heart disease, spondylitis (Anti-inflammatory activity) and in gout (East, Pharm., 1979).

Its resin is effective as gargle in pyorrhea alveolaris, chronic tonsillitis and pharyngitis.

Inhalation of fumes of resin is effective in chronic bronchitis, neural catarrh, and laryngitis and pthisis bulbi. The effect of drug was studied clinically in the patients of hyper lipidemia the drug was found to have a good antioxidant property and hypo cholesteremic effect (Singh, R.B., *et al.*, 1994).

Oral administration of ethylacetate extract of Commiphora Mukul in albino rats significantly prevented rise in serum cholesterol and serum triglyceride level caused by artherogenic diet (Lala S. *et al.*, 1991).

Z. guggulusterone has thyroid stimulating action (Tripathi, Y.B. *et al.*, 1984).

It is effect in the treatment of throat cancer (Sachitra Ayurveda, 1995).

Gum guggulu was found to possess no significant action on mammalian (Dog) and frog heart, on perfused blood vessels of the frog, on blood pressure and respiration in the dog. It was also devoid of any spasmogenic or spasmolytic action on dog's smooth muscles. In rats, lower dose (6.25 – 25 mg per 100 gm) elicited a moderate diuretic effect in comparison with that produced by urea (75 mg/100 gm). Higher doses were devoid of this effect. Doses up to 800 mg/100 gm did not produce any toxic symptoms. These studies indicate that the oleogum resin does not possess any significant pharmacodynamic action except on the kidney where it showed a moderate diuretic effect.

Nevertheless it did possess anti-arthritic and anti-inflammatory effects at the same dose levels (Gujaralm L.L., Chemical Abs. 58, 3802, 1963).

The oleoresin of gum guggulu showed anti-arthritic and anti-inflammatory effects on HCHO-induced arthritis in Adrenal ectomised rats. It did not prolong their survival time after adrenalectomy. It also did not affect adrenal weight and adrenal ascorbic acid and cholesterol contents, spleen weight and total white blood cells, lymphocytes and eosinophil count when given in dose up to 100 mg/100 gm. At higher dose level (100 mg/100 gm) there was however, depletion in adrenal cholesterol content. The effect of drug, therefore, did not seem to be mediated by the pituitary adrenal axis nor did it have any glucocorticoid or adrenocorticotropic like action.

Active Constituents:

Guggulusterone Z and E, Guggulusterol I, II and III (in Wagner and Wolff 223). Two diterpenoids – aterpine hydrocorbone named cembrane A and diterpene alcohol, mukulol, camphorone and cembrene, long choin aliphatic tetrols – actuolecan 1,2,3,4-tetral cicosan, 12, 34 tetrol and nanadecon 1,2,3,4 tetrol. Major component from essential oil of gum resin are mycine and dimyrcene (Dict. of Ind. Med. Plant, 1992).

Side Effects:

No serious side effects have been observed except diarrhoea, urticaria, and the menstrual cycle in ladies is shortened and bleeding increased. They are reversible by cessation of the therapy (Satywati 1966, Malhotra and Ahuja, 1971, Upadhyay and Tripathi, 1976).

Use of Guggulu Acc. to Ayurveda:

Guggulu was known with vaidic period and find a place of pride in Atharavaveda. Guggulu was worshiped like God. In Charaka Samhita this drug in the list of Sangyasthapaniya Mahakasay, used for restoration of consciousness. It has been used for fumigation of dresses, furniture etc. and for regular smoking purposes (Ch. Su. 5/21).

Intranasal medication and as an ointment for skin diseases (Ch. Su.3/4).

Internally, it has been indicated for rheumatism and for the rejuvenation therapy.

In Sushruta Samhita, guggulu mention as the basis of aromatic odor has placed it in Eladigana and in Katuvarga on the basis of test. In Sushruta, Mahavatvyadhi chikitsa Guggulu is described for many diseases as single drug therapy and along with other drug. Sushruta advocates its use in sthaulya to reduce the bulk of body. He states its use in udara roga, gulma, and disease of the urinary tracts, snake bite and disease of heart.

Vagbhatta has also included Guggulu in Eladigana and stated that it is one of the best remedy for disorder of lipid metabolism and rheumatic and other diseases. He also observed that it can be a good remedy for the disorders caused by excessive and improper use of the fats leading to hyperlipidaemia (Sneha Vyapat). Some texts have mentioned its use in pakshaghata and Amlapitta also; there are many preparations of guggulu as:

Kaishore-guggulu,Yograj-guggulu,Simhanad-guggulu,Trayodashanga-guggulu,Amritadi-guggulu,Triphala-guggulu,Navak-guggulu,Abha-guggulu,Kanchanar-guggulu,Ekvinshati-guggulu,Gokshuradi-guggulu,Panchtikta-ghrita-guggulu,Punarvavadi-guggulu,Panchamrit-guggulu,Mahayograj- guggulu,Rasanadi- guggulu,Lakshadi- guggulu,Saptavinshati- guggulu

Pharmacological Action According to Ayurveda

It acts on all 3 dosha because of inherent and many other properties:

Due to Madhur Rasa and Snigdha (viscous) Pichachil properties alleviates vata. Due to Madhur Kashyarasa alleviates pitta. Tikta Katu rasa and tikshna property alleviates kapha. Ruja / Vedana / Pain due to vata and Dah / Pak / Rag due to Pitta and Oedama / Shetha are due to kapha (Su. Su. 17/12).

Local Action: - Externally it relieves inflammation and pain and act as antiseptic.

Systemic Effect:

By virtue of its vatashamaka property it is supposed to act as analysis and higher studies for the research work.

Digestive System: Because of its katu, tikta and suksma properties it acts as deepana (corminative), Snigdha (viscous) and pichchila (sliminas) Sar (fluidity) and tikshna gum it acts as laxative; because of tikta and Ushna properties it acts as a stimulant the liver, relieves piles.

Cardiovascular System: This is Hridya (Strengthen the heart) induces erythropoesis and leucocytosis and antiinflammatory.

Respiratory System: Because of its Snigdha – pichchila property it acts as kaphasaraka and by virtue of its fragrant odour it acts as both antiseptic and antagonizes the mal-odour of discharge from respiratory tract.

Urinary System: Being tikshna it acts as a diuretic and also relieves urinary stones.

Reproductive System: Because of Ushna tikshna properties it stimulates sexual arouse, acts as emmenagogue, being 'Snigdha' pichchila it acts as aphrodisiae.

Skin: On all tissues acts as Rasayana and Balya. New guggulu being Snigdha and a Baly 'Bringhan' and 'Vrishya' while old guggulu being 'Ruksha' acts as 'Lekhana', i.e., decreases the bulk of the body.

Excretion: It is excreted through skin; mucous membrane and the kidney.

USES:

On Dosha – Used as tridoshshamak.

External Use:

As local application in all arthritis including Rheumatoid Arthritis, various skin disorders: buboes (plage), lipomata, and haemorrhoids and can be used as an antiseptic to antagonise bad odour and irritation.

Internal Use:

Used in almost all neurological disorders and inflammation in neuralgia, sciatica, facial palsy, hemiplegia, with good results in inflammatory condition and Rheumatoid arthritis.

Digestive System: Used in dyspepsia, liver disorder, haemorrhoids and helminthiasis.

Cardiovascular System: In cardiac disorders, anaemic, blood dycrasia, inflammation, lymph node enlargement.

Respiratory System: Used as expectorant in chronic cough, bronchitis, pulmonary tuberculosis.

Urinary System: Indicated in urinary stones, dysurea etc. Urinary stones are broken down by the drug and excreted from the body.

Reproductive System: In sterility, impotence, dysmenorrhea and other menstrual disorder.

Metabolic System: Old guggulu is indicated in Medoroga or obesity as well as prameha (polyurea including diabetes mellitus) while new guggulu is indicated in general debility and emaciation.

Skin: In many skin disorders including leprosy.

It is because of the popularity of the drug that a lot of research work is going on guggulu. (Ref. Biblio).

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ABNORMAL UTERINE BLEEDING

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Abstract: Menstrual disorders are a common indication for medical visits among women of reproductive age and heavy menstrual bleeding affects up to 30% of women throughout their reproductive lifetime. These complaints may significantly affect quality of life, result in time off work, lead to surgical intervention including hysterectomy, and ultimately have a significant impact on the health care system. Abnormal uterine bleeding (AUB) is among the most common gynaecologic complaints of reproductive-age women in ambulatory care settings. It is estimated to affect 11 to 13 percent of reproductive-age women at any given time. Prevalence increases with age, reaching 24 percent in women aged 36 to 40. This paper will provide information regarding evidence-based guidelines for the diagnosis and management of abnormal uterine bleeding (AUB) among women of reproductive age.

Key words: A.U.B., Quality of Life, coagulation, menstrual cycle, Protocol.

Introduction: A.U.B. may be defined as any variation from the normal menstrual cycle and includes changes in regularity and frequency of menses, in duration of flow, or in amount of blood loss. Under the category of AUB, further definitions may be subdivided based on volume of menstruation, regularity, frequency, duration, chronicity, and timing related to reproductive status. Bleeding not related to menses may be further characterized as well.

Classic descriptions of A.U.B. are based on the cyclicity and the quantity of menstrual flow. Although the patient's perception of the bleeding is not necessarily quantifiable, is paramount to the management of this problem. Ultimately, the woman's experience and the impact on her quality of life determine the degree to which intervention may be required. The patient's presentation of A.U.B. depends upon her subjective experience and impression of the level of blood loss. As a result, a more holistic approach should be taken with these definitions.

Heavy menstrual bleeding is the most common complaint of AUB. It has been defined as "excessive menstrual blood loss which interferes with the woman's physical, social, emotional, and quality of life can occur alone or in combination with other symptoms."

2 -Women generally present for care because the amount, timing, or other characteristics of the bleeding have changed from their individual norm. Population norms for menstrual bleeding, as established by 5th and 95th percentiles, are:

Frequency of menses within a 24- to 38-day window.

Regularity (i.e., cycle-to-cycle variation) within 2 to 20 days.

Duration of flow from 4 to 8 days.

Blood loss volume from 5 to 80 ml.

Symptoms outside this normal range, or different from normal for the individual, can become problematic and deserve evaluation because they can warn of underlying conditions. Common

problems include worry about the cause, embarrassment if the bleeding includes flooding-type bleeding with saturation of clothing, missed work and responsibilities, limitations of social activities and exercise, decreases or changes in sexual activity, and frustration with costs of sanitary protection. Collectively, the effects of troublesome bleeding reduce quality of life and drive desire for information about causes and treatment options. There is not a clear consensus on the clinical evaluation of a patient presenting with abnormal bleeding. Recommendations suggest that initial evaluation confirm the source and timing of bleeding, and exclude certain architectural etiologies, cancer, coagulation defects, and systemic disease.AUB can have many causes including pregnancy, miscarriage, ectopic pregnancy, adenomyosis, use of some birth control methods such as intrauterine device(IUD) or birth control pills, infection of the uterus or cervix fibroids, problem with blood clotting, polyp, endometrial hyperplasia, certain type of cancer such as cancer of uterus, cervix or vagina and polycystic ovary syndrome. The 2011 International Federation of Gynecology and Obstetrics (FIGO) classification recommends a structured history followed by uterine evaluation.

In the research setting, the alkaline haematin method is the preferred technique for direct measurement of total menstrual blood loss (MBL). The pictorial blood loss assessment chart is a semi-quantitative tool for uniform reporting of bleeding as represented by the degree of saturation of sanitary pads and tampons. Diagnostic tools and evaluation strategies are not within the scope of this review. However, the review captures the operational definitions used by researchers and addresses applicability of the findings to contemporary practice.

Recent international consensus recommendations, formally adopted by FIGO in 2010 and published in 2011, more consistently align terminology by creating two major groupings (i.e., discrete structural vs. nonstructural) for causes of bleeding. The FIGO classification includes nine categories of abnormal bleeding arranged according to the acronym PALMCOEIN: four have objective visual criteria detected by imaging, biopsy, or pathology (i.e., PALM: polyps; adenomyosis;
3 -leiomyomata; and malignancy and hyperplasia) while another five are not directly related to structural abnormalities (i.e., COEIN: coagulopathy; ovulatorydysfunction; endometrial; iatrogenic; and not yet classified).If we map the intended focus of this comparative effectiveness review (CER) to the FIGO classification, we are addressing the COEIN groups that are characterized as "ovulatorydysfunction" (AUB-O), "endometrial haemostatic dysfunction" (AUB-E), and "not yet classified"(AUB-N) abnormal bleeding. However it is crucial to note that direct measures of ovulation are not employed in most available literature and endometrial samples for classification are even more rare, except when used to rule out malignancy. Indeed much remains to be explained about the pathophysiology of the very common and problematic complaint of unpredictable and/or heavy bleeding. In summary, the relevant population for this review includes nonpregnant women from menarche to menopause who has had abnormal bleeding (scant or heavy) for 3months or longer that is not attributed to structural abnormalities, coagulation defects, systemic illnesses, or medications.

Pharmacologic therapies to treat AUB in the ambulatory setting include estrogens, progestogens, combination (estrogens and progestogen) hormonal formulations, NSAIDs, antifibrinolytics, and progesterone-releasing intrauterine devices (IUDs). Medical interventions are generally considered first-line treatment. Surgical intervention is usually reserved for women with persistent bleeding that does not respond to medical therapy or for women who have finished childbearing and do not wish to continue medical therapy indefinitely.

Conclusions: Abnormal uterine bleeding is a common and sometimes debilitating condition in women of reproductive age. Standardization of related terminology, a systematic approach to diagnosis and investigation, and a step-wise approach to intervention is necessary. Treatment commencing with medical therapeutic modalities followed by the least invasive surgical modalities achieving results satisfactory to the patient is the ultimate goal of all therapeutic interventions.

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Application of Ayurvedic Guidelines In Referance To Practice of Sangyaharan (Monitoring Under Anaesthesia)

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ABSTRACT:
Proper and effective plan of treatment based on clinical monitoring is comprised subjective and objective diagnostic parameters. as a matter of fact man behind machine has been of great importance and hence even in presence or, absence of diagnostic tools (machine & equipment) a subjective diagnosis plays an important role in concept of ayurveda for better patient care multifactorial diagnosis (prakriti , satva , satym, dividh, ,trividh, caturvidh, sadhvidh, asthavidh, and dashvidh pariksha) has a very much clinical relevance in this regard . In the present review article emphasis on asthavidh pariksha has been discussed with the clinical significance for a better patient monitoring with special reference to practice of sangyaharan.

Keywords: Asthavidh Pariksha, Naadi , Mutra, Mala, Jivha, Shabda, Sparsga, Drika, Aakriti, Anaesthesia and Monitoring

Introduction: Monitoring of patients Plays an important role in practice of clinical Medicine & Surgery With the advancement of Sciences & Technology many highly sensitive & sophisticated electrical & Electronic devices have been introduced for the purpose. In our clinical practice routinely we monitor CVS ,CNS ,Respiratory & other metabolic functions of a patients not only to access the prognosis of the patient but also to make a better plan of treatment.Though in the present scenario monitoring is primarily based on subjective & objective parameters but the clinical assessment of patients condition has always been of primes importance. If we go through the texts of Ayurveda we find that this aspect was very much emphasized for a better patients care prakriti Parikhsan (Psychophysical Constitution), Rog-Rogi Prakeesha (Assesment of disease & Status of patients), Trividh, Chaturvidh, Asthavidh & Dashvidh (Multifaetorial) monitoring parameters and quality. Center of treatment module (Desired & essential quality of treating physicion or, Surgeon, drug, Nursing staff, patients & attendent are some of the important factors which were considered even during ancients period the medical practice

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Monitoring of anaesthesia – A fundamental Need / Aim : Basically it has two different meanings , first one to monitor the required level of anaesthesia (drugs and technique) according to the status of patient and surgical interventions ans second one is to monitor vitals of a patient under anaesthesia and surgery. In both the circumstances we collect the informations from the patient and that is why monitoring of a patient under anaesthesia is quiet appropriate for a better out come. Many subjective and objective (invasive and non invasive) monitoring devices are in practice since the evolution of medical since with a revolutionary advances not only in anaesthesia practice but also in other specialties of medical science. The review of ancient medical texts - Ayurveda strongly focuses on many fundamental monitoring guidelines which are very meaningful even today.

A patient under General anaesthesia is unconscious and his cardio, respiratory and cerebral functions are not in patients own control . Becomes of the administration of anesthetic drugs and techniques used for, patient is unable to report his problems and only clinical signs and symptoms are being assessed and monitored .The following eight important monitoring parameters mentioned in ancient Ayurvedic texts are of clinical importance in practice of anaesthesia even in present scenario-

- Nadi- Diagnosis made through Pulse examination
- Mutra- Diagnosis made through Urine examination
- Mala- Diagnosis made through metabolic Bi products examination
- Jihwa- Diagnosis made through Tongueexamination
- Shabda- Diagnosis made through examination body sounds
- Drika- Diagnosis made through Eye examination
- Sparsh- Diagnosis made through Skin / Touch examination
- Aakriti- Assessment of total body appearance

❖ **Nadi Pariksha (Monitoring through Pulse Examination) -**

A continuous monitoring of pulse is always recommended in practice of anaesthesia , as it gives not only the information of cardiac functions but also translates all the vital systemic functions .Some times an experienced manual monitoring of pulse gives more accurate information even in presence of sophisticated electronic devices which are being considered as only and ultimate monitoring tool.Following are some important points routinely assessed and monitored through pulse examination-

- Pulse character ,rate , rhythm, volume and consistency are mainly observed
- They are indicative of cardiac performance and arterial pressure.
- Any lteration in arterial pressure is reflected through pulse in terms of tachycardia and bradycardia.
- Metabolic ,endocrinal, gastro intestinal, hepato renal, C N S functions ,fluid and electrolyte imbalance , loss of blood, depth of anaesthesia , technique of anaesthesia and drugs ,surgical postures ,psychological status of patient , environment of operation theatre etc. are some important condition where a patient condition can be monitored by simple examination of pulse.
- In an emergent crisis simple monitoring of pulse at temporal, radial, carotid and femoral sites has been proved prompt live saving diagnostic tool.
- Respiratory acidosis, alkalosis, hypercarbia, hypoxia are also diagnosed with help of pulse.

Possible causes of alteration in pulse-

Pulse Rate - Related to conduction of heart-

- **Tachycardia-** Heart rate > 100/min

  Hypoxaemia , Hypercapnia , Inadequate and light plane of anaesthesia ,Inadequate and poor analgesia ,Hypovolemia ,Hypotension ,Laryngoscopy ,Endotracheal intubation ,Hypertension ,Ventricular ectopic , Exercise ,Emotion, Excitement, Anxiety, Apprehension, Intense pain ,Thyrotoxicosis , Pyrexia , Burn ,Sepsis Hyperthyroidism, Vagolytic drugs- antidholinergics, , pancuronium, Sympathomimetic drugs- ephedrine, ephineprine.

- **Relative tachycardia-** Tuberculosis
- **Paroxysmal tachycardia**-IHD, cardio myopathies, rheumatic carditis.
- **Bradycardia-** Heart rate < 60 /min

  Sever hypoxia ,Myxoedema ,Athelete ,Vasovagal attack ,2nd degree heart block, Opioids ,Deep level anaesthesia ,Surgical intervention- cervical dilatation, peritoneal traction, eye ball traction ,Hypothermia ,Hypothyroidism ,Drugs-succinylcholine , fentanyl , propofol,halothane, atracurium, vecuronium

- **Relative bradycardia-**

  Viral fever and 1st week of enteric fever

- **Missed beat-**

  Over indulgence of tea ,coffee, ciggrates, alcohol ,Anxiety ,Dyspepsia ,Digitalis overdose

Pulse Rhythm -

- Regularly irregular- extra systole, 2nd degree heart block, sinus arrhythmia, Pulsus bigeminus
- Irrerularly irregular- atrial fribillation, atrial flutter

Pulse Volume-

- **High volume pulse-**
  After exercise ,Sever anemia ,Pyrexia ,Pregnancy,Atherosclerosis ,Sinus bradycardia ,Chronic cor pulmonale ,Thyrotoxicosis
- **Low volume pulse-**
  Shock ,Congestive cardiac failure ,Pericardial effusion
- **Thready pulse** - Low volume with rapid pulse
  Cardiogenic shock ,Peripheral circulatory failure
- **Absent pulse-**
  Anatomical abnormality, Embolism, Sever atherosclerosis, Asystole of heart.

❖ **Mutra Pariksha (Monitoring through Pulse Examination) -**

- The examination of urine reflects the status of all body system.
- The reliable method for monitoring of urine output is urinary bladder catheterization.
- Urinary output is a reflection of kidney perfusion.
- Indicator of renal , cardiovascular , hepatic,endocrinal, psychological & fluid volume status.
- Indication for pre operative urine monitoring- Hypertension, Hypotension, Diabetes ,Shock, Obstetrics,Intestinal obstruction and perforation and Road traffic accident etc.
- Points to be considered in urine monitoring- urine output (oligouria, anuria, polyurea), pH ,Concentration, Glycosuria, Chyleurea etc.
- Its color indicates about its concentration, any injury in genitourinary system.
- Its volume indicates about accidental cutting or ligation of ureter during surgery, sever hypotension, pyrexia ,endocrinal dysfunction, certain drugs, metabolic dysfunction and psucholodical status of patient.

❖ **Mala Pariksha(Monitoring through Metabolic biprodycts Examination) -**

- According to Ayurveda mala includes mutra(urine),purisha (feces) and sweda(sweat).
- Sweda and purisha is also very important in anaesthesia monitoring.
- Proper formation of malas are based on proper metabolic function governed by Endocrinal , Hepatobiliary & Digestive system.

- Each drug is finally metabolized in the liver and excreted through stool, urine , sweat & expiration and hence liver function test is important.
- The main criteria behind the mala pariksha in relation to anaesthesia is to estimate the LFT & RFT. So that any exaggerated or cumulative response of anaesthetic drug may be evaluated.
- Increased perspiration and lacrimation are important sign of light anaesthesia.
- Metabolic &endocrinal dysfunction, pyrexia ,hypoxemia, hypercarbia and anticholenergic drugs effects the formation of sweat and influence the fluid and electrolyte balance.
- Certain conditions like diarrhea ,constipation, delayed gastric emptying and flatulence not only effect the psychophysical status of a patient but also influences the functions of vitals which plays an important role in practice of anaesthesia and patient monitoring.

❖ **Jihva Pariksha(Monitoring through Tongue Examination) -**

- Jihva Pariksha has great importance in monitoring of anaesthesia .
- Tongue is considered as the index of stomach and gives vital clues to make a diagnosis.
- Any abnormality in colour, shape, size, presence of fissures or cracks ulcerations, salivation, furr on tongue, tremor, and deviation to one side should be noted.
- Tongue movement , color , also play important role in anaesthesia monitoring.
- Tongue falls back and obstruct the airway in an unconscious patient.
- **Movement of Tongue -**
  - Rapid forwards b6ackwards- Parkinson's disease,
  - Irregular and continued movements- Extra pyramidal Syndrome
  - Tremors -Anxiety neurosis, Thyrotoxicosis ,Chronic. Alcoholism
- **Size of Tongue -**
  - Large- Down syndrome, Cretinism, Myxoedem
  - Small- Motor neurondz Tongue wasting
- **Hydration status-**
  - Dry- Dehydration, Xerostom, atropine
  - Moist- Sialorrhoea, Heavy metal Poisioning
- **Colour of tongue -**
  - Pale- anemia ,
  - Blue- cyanosis ,
  - Yellow- jaundice ,
  - Magenta - riboflavin deficiency,

- Raw beef - pellagra and vit B_{12} deficiency ,
- White or grayish coating-smoking ,sore throat, acute tonsillitis,
- Blotting paper like- hookworm manifestation

- **Deviation of Tongue -**
  - UMN palsy- opposite side
  - LMN palsy- same side

Shabda Pariksha (Monitoring through different body Sounds Examination) -

- Shabda Pariksha has a specific role in diagnosis and monitoring of patient.
- Pratyaksha is main stream to understand things and Shabda is one of the main Upadhi for that purpose.
- Organs like heart, lung and intestine etc produce sound while working. These sounds may be altered in diseases.
- People use sounds in communicating with others, this can also be altered in various pathological conditions.
- By percussion and auscultation of sounds the position of hard organs, presence or absence of fluid or gas in cavities etc can be ruled out.
- In Respiratory system examination, inspiratory and expiratory sounds with or without an intermediate pause or interval are detected.
- Abnormal breath sounds are heard if they are abnormally generated and conducted.
- Auscultation is an important part of abdominal examination. It is best carried out in deep expiration.
- Auscultation also plays important role in anaesthesia monitoring.Position of endo trachial tube is always assessed by auscultation .
- Phonation and whispering plays an important role in anaesthesia monitoring.

Sparsha Pariksha (Monitoring through Skin / Touch Examination)- -

- Sparsha Pariksha can be compared with palpation and percussion. It is an important clinical method for examination of skin to assess the state of organs and tissues.
- Warm and cool condition of skin (especially of extremities) indicates body temperature , status of blood circulation, fluid and electrolyte status , acid base balance.

- It indicates about dehydration.
- Monitoring of core body temperature is one of the aspects of spars pariksha.
- Hypothermia most commonly observed in anesthesia practice due to –
  - Most of the anesthetics are vasodilator and cause heat loss and hypothermia.
  - Cool room temperature.
  - Cool i.v. fluids.
  - Evaporation and prespiration

- **Causes of Hyperthermia**
  - Over enthusiastic heating
  - Sepsis
  - Allergic recation
  - Malignant hyperthermia
  - Thyrotoxicosis crisis
  - Neuroleptic malignant syndrome

- **Problems due to Hypothermia**
  - Delayed recovery from anaesthesia
  - Slow metabolism of drug
  - Shivering
  - ↑ed O_2 Consumption
  - ↑ es SVR
  - Hypertension

- **Conseqences of perioprative hypothermia**

- **Cardiac-**
  - Cardiac Output decreases, HR decreases, BP decreases
  - Pulse Rate duration increases, QRS duration increases, QT prolongation
  - Cardiac work increases , MI risk increases
- **Respiratory-**
  - increased dead space, respiratory fatigue
- Wound infection
- Prolonged drug action
- Prolonged coagulation
- DVT risk increases

❖ **Treatment of hypothermia-**

- I.V. fluid warmer
- Minimal exposure
- Blanket
- ↑es O.T. temp.
- Drugs-pethidine,tramadol,doxapram,clonidine,physostigmine,ondansetron etc.

Drik Pariksha (Monitoring through Eye Examination)- –

- Examination of eye also plays an important role in anesthesia monitoring.
- Colour of conjunctiva – Pale, White, Yellowish indicates pathological conditions like anaemia, jaundice.
- Dryness of conjunctiva and sunken eye ball indicates dehydration, blood and fluid loss
- Size of Pupil and eye ball movement , lacrimation are indicative of depth of anesthesia ,hypoxia, shock and drugs like opiod and atropine.
- During anesthesia there is loss of corneal reflexes so eyes should be protected and regularly observed.
- Some special features of eyes also indicate certain diseases e.g. Excessive blinking is a sign of nervousness, anxiety or fear.
- Corneal oedema seen during general anaesthesia due to pressure effect of mask holding.
- Drooping upper eyelid indicates a sense of insecurity, fear or lack of confidence.

Aakriti Pariksha (Monitoring through General body Examination) -

- Aakriti pariksha also plays an important role in anaesthesia monitoring.
- Look of a patient general condition – fair, good and poor helps in planning of anaesthesia and recovery from anaesthesis .
- Certain disease condition give a special look of patient.
- Prognosis of treatment is based on patients look and helps in further treatment.
- Respiratory movements are indicative of adequacy of lung ventilation.
- Movement of head with respiration is an indicative of depth of anesthesia.
- Muscle tone and movement indicates relaxation and depth of anesthesia.

- Facial expression during anesthesia indicates about pain and depth of anesthesia.

In practice of anaesthesia a patient is made unconscious and unaware to surroundings. In case of general anaesthsia to a patient, only the heart pumps and rest of the vital functions are under the control of anaesthetist and hence a very close monitoring is always recommended. With the advancement of science and technology many sophisticated electronic monitoring devices have been introduced and are very helpful but in certain conditions – failure or fault of these tools we have to apply our clinical expertise .The above mentioned eight monitoring aspects described long back in the texts of Ayurveda are very much relevant in this regard.

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