IJSN

Indian Journal of Surgical Nursing

Editor-in-Chief
Pramilaa R.

Editorial Office
Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I, Delhi - 110 091(India)
Phone: 91-11-22754205, Fax: 91-11-22754205
E-mail: redflowerppl@vsnl.net
Website: www.rfppl.co.in

RED FLOWER PUBLICATION PVT. LTD.

Managing Editor
A. Lal

Publication Editor
Dinesh Kumar. Kashyap, Manoj Kumar Singh

Indian Journal of Surgical Nursing is the professional, peer-reviewed journal for nurses in surgical nursing practice. Written by and for surgical nurses, the journal features clinical articles covering a wide variety of surgical procedures. The articles are including patient education techniques and research findings in all issues of **Indian Journal of Surgical Nursing**. **Indian Journal of Surgical Nursing** is committed to the advancement of adult health/medical-surgical nursing practice. **IJSN** supports adult health/medical-surgical nurses as they strive for excellence in patient care, private practice, and outpatient health care settings in different types of locations in the world.

Subscription rates worldwide: Individuals (annual) - Rs.500/USD70; Individual (life membership-valid for 10 years) Rs.3000/ USD300; Institutional (annual)- Rs.1800/USD70. Single issue Rs.600/USD25. Payment methods: By Demand Draft/cheque should be in the name of **Red Flower Publication Pvt. Ltd**. payable at Delhi. By Bank Transfer/TT: **Bank name:** Bank of India, **IFSC Code:** BKID0006043, **Swift Code:** BKIDINBBDOS, **Account Name: Red Flower Publication Pvt. Ltd.,** Account Number: 604320110000467, Branch: Mayur Vihar Phase-I, Delhi – 110 091 (India) or you can log on to www.rfppl.com.

Printed at Saujanya Printing Press, D-47, Okhla Industrial Area, Phase-1, New Delhi - 110 020

Instructions to Authors

Submission to the journal must comply with the Guide for Author.

Non-compliant submission will be returned to the author for correction.

To access the online submission system and for the most up-to-date version of the Guide for Authors please visit:

http://www.rfppl.co.in

Technical problems or general questions on publishing with ***IJSN*** are supported by Red Flower Publication Pvt. Ltd's Author Support team (http://ww.rfppl.co.in)

Alternatively, please contact the Journal's Editorial Office for further assistance.

Publication -in-Charge

Indian Journal of Surgical Nursing

Red Flower Publication Pvt. Ltd.

41/48, DSIDC, Pocket-II

Mayur Vihar Phase-I

Delhi – 110 091, India

Phone: 91-11-22754205, 45796900, Fax: 91-11-22754205

E-mail: redflowerppl@gmail.com

Website: www.rfppl.co.in

Indian Journal of Surgical Nursing

IJSN

May - August 2014
Volume 3 Number 2

Articles

Revised Rates for 2014 (Institutional)

Title	Freequency	Rate (Rs): India	Rate ($):ROW
Dermatology International	2	2500	280
Gastroenterology International	2	3500	360
Indian Journal of Agriculture Business	2	4500	300
Indian Journal of Anatomy	2	3200	260
Indian Journal of Ancient Medicine and Yoga	4	6600	330
Indian Journal of Anesthesia and Analgesia	2	4000	600
Indian Journal of Anthropology	2	8000	500
Indian Journal of Applied Physics	2	3500	400
Indian Journal of Biology	2	1500	170
Indian Journal of Cancer Education and Research	2	4500	500
Indian Journal of Communicable Diseases	2	1000	58
Indian Journal of Dental Education	4	3200	288
Indian Journal of Forensic Medicine and Pathology	4	12500	576
Indian Journal of Forensic Odontology	4	3200	288
Indian Journal of Genetics and Molecular Research	2	5000	262
Indian Journal of Law and Human Behavior	2	5000	500
Indian Journal of Library and Information Science	3	7500	600
Indian Journal of Maternal-Fetal & Neonatal Medicine	2	4500	400
Indian Journal of Mathematics and Statistics	2	3000	200
Indian Journal of Medical & Health Sciences	2	1800	120
Indian Journal of Obstetrics and Gynecology	2	2000	200
Indian Journal of Pathology: Research and Practice	2	3000	915
Indian Journal of Plant and Soil	2	5000	1700
Indian Journal of Preventive Medicine	2	3200	270
Indian Journal of Reproductive Science and Medicine	4	3000	180
Indian Journal of Scientific Computing and Engineering	2	3300	280
Indian Journal of Surgical Nursing	3	1800	70
Indian Journal of Trauma & Emergency Pediatrics	4	6500	302
International Journal of Agricultural & Forest Meteorology	2	8000	800
International Journal of Food, Nutrition & Dietetics	2	3200	900
International Journal of History	2	6000	500
International Journal of Neurology and Neurosurgery	2	7500	276
International Journal of Political Science	2	5000	400
International Journal of Practical Nursing	3	1500	70
International Physiology	2	4000	240
Journal of Animal Feed Science and Technology	2	3500	280
Journal of Cardiovascular Medicine and Surgery	2	5500	238
Journal of Orthopaedic Education	2	2500	190
Journal of Pharmaceutical and Medicinal Chemistry	2	3000	350
Journal of Psychiatric Nursing	3	1800	70
Journal of Social Welfare and Management	4	6600	276
Meat Science International	2	5000	500
Microbiology and Related Research	2	3800	150
New Indian Journal of Surgery	4	6500	360
Ophthalmology and Allied Sciences	2	3000	150
Otolaryngology International	2	2000	300
Pediatric Education and Research	4	3200	150
Physiotherapy and Occupational Therapy Journal	4	7000	360
Urology, Nephrology and Andrology International	2	2200	350

Terms of Supply:

1. Advance payment required by Demand Draft payable to Red Flower Publicaion Pvt. Ltd. payable at Delhi.
2. Cancellation not allowed except for duplicate payment.
3. Agents allowed 10% discount.
4. Claim must be made within six months from issue date.

Order from

Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi - 110 091 (India), Tel: 91-11-22754205, 45796900, Fax: 91-11-22754205. E-mail: redflowerppl@vsnl.net, redflowerppl@gmail.com, Website: www.rfppl.co.in

Neonatal Abstinence Syndrome

IJSN
Volume 3, Number 2

Vinu K.S.

Abstract

Neonatal abstinence syndrome (NAS) is a condition in which opioid impact will be in neonates by the over usage of pregnant women. Incidence rate revealed that one baby per hour affected by neonatal abstinence syndrome. And it widely affecting gastro intestinal, autonomic and central nervous system. Etiology implies misuse of licit or illicit drugs. This article covering the management which includes the pharmacological and non-pharmacological treatment modalities and this article contain how can assess the newborn with the help of a modified Finnegan scoring system to identify the withdrawal symptoms. And some innovations in treatments are implemented now days are also embedded in this article. Finally this article winding up with the preventive measures for neonatal abstinence syndrome.

Keywords: Neonatal abstinence syndrome; Newborn; Opioids; Finnegan scale; Morphine; Methadone.

Introduction

In line with a growing worldwide trend of increasing illicit drug use there has been an increase in the incidence of women of childbearing age becoming dependent on drugs of addiction, resulting in higher drug use in pregnancy. Over the last decade, there has been increasing public health, medical, and political attention paid to the parallel rise in two trends: an increase in the prevalence of prescription opioid abuse and an increase in the incidence of neonatal abstinence syndrome. The two trends are likely intertwined, but many questions remain about the nature of the neonatal abstinence syndrome "epidemic" and how best to screen for affected infants and manage their symptoms.

A 2012 study from the University of Michigan and the University of Pittsburgh analyzed information on 7.4 million discharges from 4,121 hospitals in 44 states, to measure trends and costs associated with NAS over the past decade. The study indicated that between 2000 and 2009, the number of mothers using opiates increased from 1.19 to 5.63 per 1,000 hospital births per year. Newborns with NAS were 19% more likely than all other hospital births to have low birth weight and 30% more like to have respiratory complications. Between 2000 and 2009, total hospital charges for NAS cases, adjusted for inflation, are estimated to have increased from $190 million to $720 million.[1]

What is NAS?

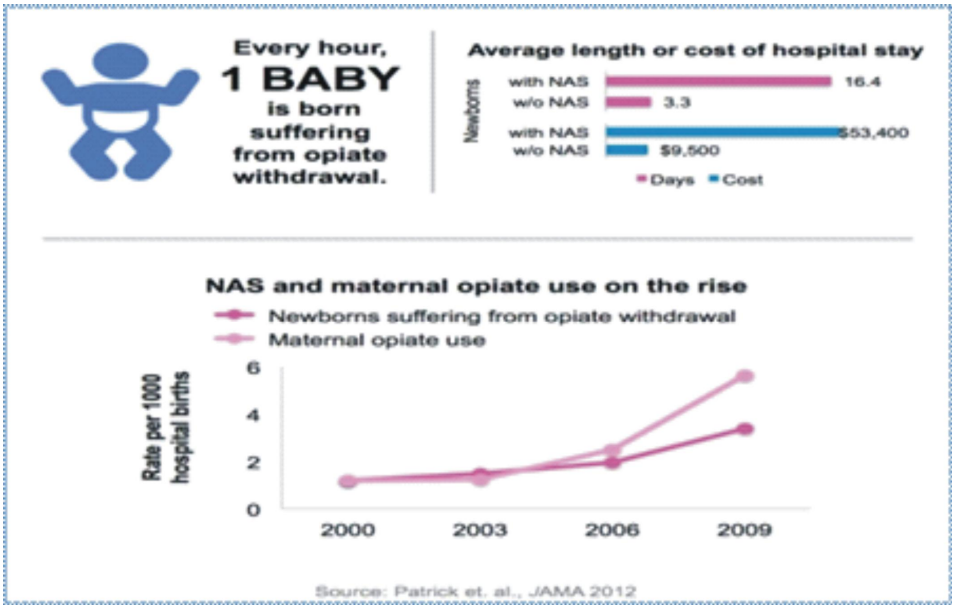
Neonatal withdrawal or neonatal abstinence syndrome (NAS) is a withdrawal syndrome of infants, caused by the cessation of the administration of licit or illicit drugs. The drugs involved may be for example opioids, SSRIs, ethanol and benzodiazepines. There are two types of NAS: prenatal and postnatal. Prenatal NAS is caused by discontinuation of drugs taken by the pregnant mother, while postnatal NAS is caused by discontinuation of drugs directly to the infant.[2]

In utero exposure to certain drugs can cause neonatal withdrawal after birth when the drug is abruptly stopped because the infant—like the mother—has developed physical dependence on the drug.

Author Affiliation: *Lecturer, Naincy College of Nursing, Jeolikote, Nainital, Uttarakhand, India.

Correspondance: Vinu K.S. M.Sc. (N), Lecturer, Naincy College Of Nursing, Jeolikote, Nainital, Uttarakhand, India.

E-mail: vinuks12@gmail.com



Incidence

- In queensland 2007, the reported incidence of NAS in newborn babies was 0.3%, however incidence may be higher than reported.[3]
- An Australian survey reported illicit drug use in 6% of women who were pregnant and/or breastfeeding in the preceding 12 months.[4]
- The ideal study in the United States reported 10.7% of mothers had used illicit drugs during pregnancy.[5]
- Alcohol use in Australia was reported in almost half of pregnant women and women who were breastfeeding up to 6 months postpartum. In the USA, 4.5% of pregnant women reported binge drinking in the past month.[4]
- A retrospective, serial, study to determine the national incidence of NAS and antepartum maternal opiate use and to characterize trends in national health care expenditures associated with NAS between 2000 and 2009. Results of this study revealed the separate years (2000, 2003, 2006, and 2009) of national discharge data included 2920 to 9674 unweighted discharges with NAS and 987 to 4563 unweighted discharges for mothers diagnosed with antepartum opiate use, within data sets including 784 191 to 1.1 million discharges for children (KID) and 816 554 to 879 910 discharges for all ages of delivering mothers (NIS). Between 2000 and 2009, the incidence of NAS among newborns increased from 1.20 to 3.39 per 1000 hospital births per year By 2009, 77.6% of charges for NAS were attributed to state Medicaid programs.[6]

Signs and Symptoms[14]

Symptoms of NAS depend on various factors including the type of drug the mother used, how much of the drug she used, how long she used the drug, and how the mother's body breaks down the drug.Infants that are at a high risk for withdrawal need to be watched very closely for any of these signs or symptoms. If the infant begins to show any signs or symptoms scoring must be started immediately. Symptoms may include the following:

Management of NAS

Trends[9]

- Increased research in clonidine and buprenorphine
- Pharmacogenetics
- Polysubstance abuse treatment
- Dose optimization

Pharmacological Management

Pharmacological management is indicated to relieve moderate to severe signs of NAS and prevent complications such as fever, weight loss, and seizures

Causes[7,8]
Substances used or misused

Opiods	CNS stimulants	CNS depressants	Hallucinogens
Agonists	Amphetamines	Alcohol	Alkaloids
Codeine	Amphetamine		Lysergic acid diethylamide (LSD)
Fentanyl	Dextroamphetamine	Barbiturates	Psilocin
Heroin (Diacetyl	Methamphetamine		Psilocybin
Morphine		Benzodiazepines	Dimethyltryptamine (DMT)
Hydromorphone	Amphetamine related	Alprazolam	Diethyltryptamine (DET)
	Benzphetamine	Clonazepam	
Morphine	Diethylpropion	Diazepam	Inhalants
Methadone	Ephedrine	Flunitrazepam	Solvents and aerosols (glues,
Meperidine	Fenfluramine	Oxazepam	gasoline, paint thinner, cleaning solutions, nail polish remover,
Oxycodone			
	Mazindol	Temazepam	
			freon))
Propoxyphene			
	Methcathinone		
	Methylphenidate (Ritalin)	Cannabinoids	
			Phenylethylamines
Antagonists			
	Pemoline	Cannabis/marijuana	
			Mescaline
Naltrexone	Phendimetrazine	Hashish	
			Peyote
	Phentermine		
Mixed agonist-			
	Phenylpropanolamine		
			Stimulant with hallucinogenic
Antagonists			
			properties
Buprenorphine			
	Caffeine		Methylenedioxyamphetamine
(Subutex)			
	Cocaine		(MDA)
			3-methoxy-4,5-
Butorphanol			
			methylenedioxyamphetamine
	Nicotine		
Nalbuphine			(MMDA)
Pentazocine			3,4-methylene dioxyamphetamine
	Dissociative anaesthetics		(MDMA)(Ecstacy)
	Phenylcyclidine (PCP)		3,4-methyl-enedioxyamphetamine
	Ketamine		(MDEA)
	Selective serotonin reuptake inhibitors		Nitrites
			Nitrous oxide
	Citalopram (Cipramil, Celapram, Talam)		
	Escitalopram oxalate (Lexapro, Esipram)		
	Fluoxetine (Prozac, Lovan) (Luvox, Voxam)		
	Sertraline (Zoloft, Zydep, Septrone)		
	Serotonin-noradrenaline reuptake inhibitors (SNRIs)		
	Venlafaxine hydrochloride		

System	Signs and symptoms
Central nervous system	• Tremors • Irritability • Increased wakefulness • High pitched crying • Increased muscle tone • Hyperactive deep tendon reflexes • Exaggerated Moro reflex • Frequent yawning and sneezing
Gastrointestinal	• Poor feeding • Uncoordinated and constant sucking • Vomiting • Diarrhoea • Dehydration • Poor weight gain
Autonomic	• Increased sweating • Nasal stuffiness • Fever • Mottling • Temperature instability

if an infant is not responding to non-pharmacological support.

Pharmacological therapy, however, should be undertaken with caution because it can lengthen the hospital stay and may interfere with mother-infant bonding.

The first-line therapy for opioid withdrawal is treatment with an opiate.

- Morphine is an option and used only in the inpatient setting.
- Methadone is another option and may be weaned

After hospital discharge, but outpatient dosing requires good follow-up and teaching for families. Methadone has a variable half-life in infants, so the drug can accumulate in the infant and cause lethargy.[1]

The safety, feasibility, and efficacy of outpatient methadone treatment continue to be studied to identify pharmacological agents that would safely decrease the length of inpatient hospitalization in.Mainstay of pharmacologic NAS treatment is oral opioid therapy (morphine, methadone).

- Most physicians (94% in the UK and 83% in the US) use an oral opioid as the first choice.[9]
- The American Academy of Pediatrics (AAP) guidelines for neonatal drug withdrawal supports the use of opioid treatment but makes no recommendation for drug of choice.[2]
- Phenobarbital and clonidine may also be used as an adjunct to opioid therapy[12]
- Buprenorphine is another potential new option for infant treatment, but this drug needs further study as a primary choice for NAS[12].
- Clonidine and phenobarbital are drugs that may be used as adjunct therapy to the primary opiate treatment for NAS. Adjunct therapy or specially tailored regimens may be particularly important for infants with withdrawal following polydrug exposure.[12]

Methadone Maintenance Therapy

Methadone maintenance therapy (MMT) is the current standard of care for the management of opioid addiction in pregnanc. Several research studies address the multiple benefits of thistreatment including improved neonatal outcomes and the potential for astrengthened maternal-infant relationship immediately following the infant's

birth.Methadone is administered daily under the care of a physician and pharmacist and, as such,offers consistent opportunities for engagement and intervention for medical and social risk factors.[10]

In the United States a national survey to determine the monitoring and treatment of NAS in neonatal intensive care units (NICUs) following opioid or polydrug exposure in utero, found that opioids (tincture of opium or morphine sulphate solution) were most commonly used for management of both opioid (63%) and polydrug withdrawal (52%), followed by phenobarbital (32%) for polydrug withdrawal and methadone (20%) for opioid withdrawal. Overall 70% of the respondents use phenobarbital and 25% use intravenous morphine to control opioid withdrawal seizures, with 81% of respondents using phenobarbital for polydrug withdrawal seizures. Only 70% of respondents always use a scoring system when deciding whether to start, titrate or cease pharmacologic treatment for neonatal withdrawal.[10]

Non-Pharmacological Care

Non-pharmacological management should be the standard of care for all opioid-exposed infants to help them sleep, eat, gain weight, and interact with caregivers. Non-pharmacological interventions include:

- Minimizing stimuli such as light and sound
- Avoiding infant auto stimulation by careful swaddling
- Responding early to an infant's signals
- Adopting infant positioning and comforting techniques such as swaying, rocking, and pacifier use.[15]
- If there is no contraindication, such as HIV infection, mothers should be encouraged to breastfeed because it has been associated with ameliorating and delaying withdrawal symptoms, even after adjusting for prematurity and polydrug exposure.[16]
- Providing frequent small volumes of feeds to allow for adequate growth.

Infants who are being observed for withdrawal need to be continuously monitored, such as with pulse oximetry or a cardiorespiratory monitor, but if this can be conducted using a mother-baby unit, then there is more opportunity to support mother-infant bonding.[16]

Some evidence indicates that the site of care may influence short-term outcomes. For example, infants who room-in with mothers instead of being transferred to a NICU had an increased likelihood of being discharged home with their mother and a decreased need for NAS drug therapy.[15]

Positive role modeling by healthcare providers on how to recognize and respond to infants' cues can help set the tone for mother-infant attachment and healthy interactions.[16]

When to initiate pharmacologic treatment?

A scoring scale is implemented to assess severity of NAS, Many scales are available, but the Modified Neonatal Abstinence Scoring System, otherwise known as the modified Finnegan Score is the predominant tool used in the United States.[11]

- The modified Finnegan Score is a numeric description of the severity of symptoms and can be used to decide when to initiate treatment and to determine treatment efficacy. [11]

Neonatal Abstinence Syndrome Scoring Form[15]

Name:……..

DOB:……

SIGNS:

Observation from past 3- 4 hours

BirthWeight:……..grams

Start new scoring sheet each calendar day.

Daily Weight :……grams

Care of babies at risk of NAS born to substance using mothers.[17]

Ante natal care:

- Under taken a comprehensive physical and psychological assessments.
- Should identify women's need eg: referral to community services, substance use in pregnancy services etc.

Date:	Score	Time	Time	Time	Time	Time	Time	Time	Time
High pitched cry: inconsolable >15 sec. OR intermittently for <5 min.	2								
High pitched cry: inconsolable >15 sec. AND intermittently for =5 min.	3								
Sleeps <1 hour after feeding	3								
Sleeps <2 hours after feeding	2								
Sleeps <3 hours after feeding	1								
Hyperactive Moro	1								
Markedly hyperactive Moro	2								
Mild tremors: disturbed	1								
Moderate–severe tremors: disturbed	2								
Mild tremors: undisturbed	1								
Moderate–severe tremors: undisturbed	2								
Increased muscle tone	1–2								
Excoriation (indicate specific area): _____	1–2								
Generalized seizure	8								
Fever =37.2°C (99°F)	1								
Frequent yawning (=4 in an interval)	1								
Sweating	1								
Nasal stuffiness	1								
Sneezing (=4 in an interval)	1								
Tachypnea (rate >60/min.)	2								
Poor feeding	2								
Vomiting (or regurgitation)	2								
Loose stools	2								
=90% of birth weight	2								
Excessive irritability	1–3								
Total score									
Initials of scorer									

- Refferal to home visting services
- Antenatal collaboration and communication between drug and alchohol addiction treatment provides and antenatal care providers.
- Assess womens level of intoxication
- If in withdrawal , seek urgent drug and alchohol addiction treatment services
- Immediate case and assessment of the newborn at birth.

Post natal care:

- Assessment of newborn by finnegan scale for identifying withdrawal symptoms.
- Assessment of maternal well being
- Continuing drug and alchohol addiction traetment for mother confirmed.
- Naloxone should not be administered to babies whose mothers are known or suspected to be dependent on opioids.
- A case conference should be conducted by multi diciplinary team to formulate a discharge plan.
- Discharge planning meeting should be attended by the parents, member of multi disciplinary team and representatives from relevant services.

Discharge and follow- up[17]

- Mother and baby should be discharged only after minimum of 5-7 days following medical and psychosocial assessment that indicates a stable condition.
- A formal discharge plan discussed with parents circulated to a multi disciplinary team and should make the refferals if necessary.

Infant follow – up:

- Infants at risk of NAS should be referred to

Neonatal Abstinence Syndrome (NAS) Scoring Explanation[15]

Assessment & Documentation
- The infant is scored at 2 hours of age and every 3-4 hours prior to a feeding
- The NAS score will be recorded for the 3-4 hour period immediately before the scoring activity
- Signs and symptoms are documented on the NAS form and totaled for a score

Sleeping
- For every sign except sleeping, a score of 0 = not present
- Sleeps 3 or more hours continuously(Score = 0)
- Sleeps 2-3 hours after feeding (Score = 1)
- Sleeps 1-2 hours after feeding (Score = 2)
- Sleeps less than 1 hour after feeding (Score = 3)
- When repeating a score within 1 hour after a feeding: use the same sleep score obtained before the feeding.

Moro Reflex
- Cup infant's head in your hand and raise his/her head about 2-3 inches above the mattress, then drop your hand while holding the infant.
- The infant should be quieted if irritability or crying is present. This will insure that the jitteriness, if present, is due to withdrawal rather than agitation.
- Hyperactive Moro: arms stay up 3-4 sec with our without tremors (Score = 1)
- Markedly Hyperactive Moro: arms stay up > 4 sec with or without tremors (Score = 2)

Tremors
- Tremors = jitteriness
- Involuntary movements that are rhythmical
- If the infant is asleep, it is normal to have a few jerking movements of the extremities
- Mild tremors: hands or feet only, last up to 3 seconds (Score = 1)
- Moderate-severe tremors: arms or legs, last more than 3 seconds (Score = 2)
- Undisturbed: tremors that occur in the absence of stimulation

Increased Muscle Tone
- While the infant is lying supine, extend and release the infant's arms and legs to observe for recoil
- Infant supine, grasp arms by wrists and gently lift infant, looking for head lag
- Difficult to straighten arms but is possible, and head lag is present (Score = 1)
- No head lag noted or arms or legs won't straighten (Score = 2)

Sweating
- Wetness felt on the infant's forehead, upper lip (Score = 1)
- Sweating on the back of the neck may be from overheating such as swaddling

Nasal Stuffiness
- Any nasal noise when breathing (Score = 1)
- Runny nose may or may not be present

Sneezing
- Infant sneezes 4 or more times in the scoring interval of 3–4 hours (Score = 1)

Tachypnea
- The infant must be quieted if crying first; count respirations for full minute
- Respiratory rate > 60/min (Score = 2)

Nasal Flaring
Outward spreading of the nostrils during breathing(Score = 1)

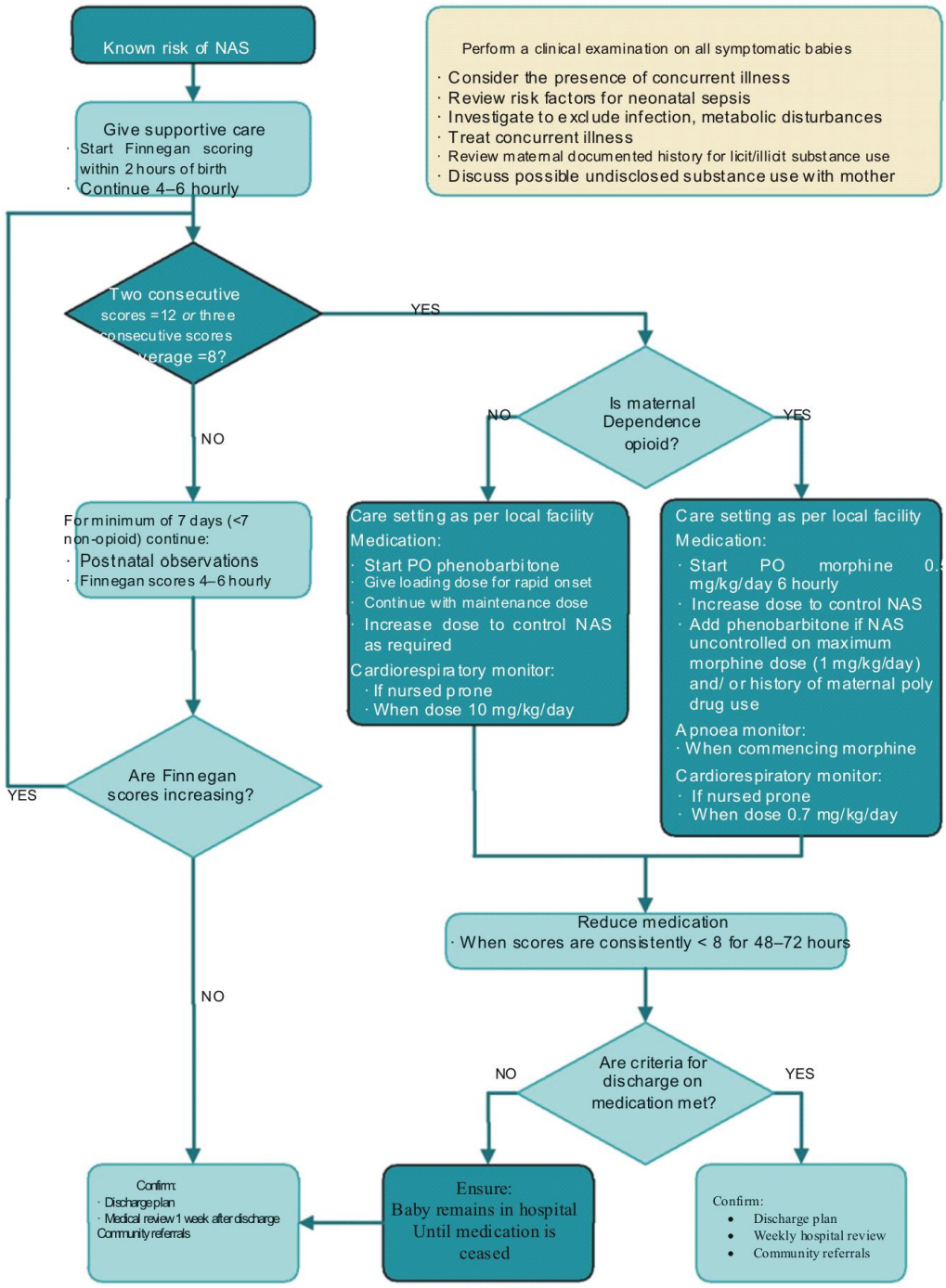
Poor Feeding
Poor feeding is defined as any 1 of the following (Score = 2)
- Infant demonstrates excessive sucking prior to a feeding yet sucks infrequently while feeding and takes a small amount of formula/ breast milk
- Demonstrates an uncoordinated sucking reflex (difficulty sucking and swallowing)
- Infant continuously gulps while eating and stops frequently to breathe
- Inability to close mouth around bottle/breast
- Feeding takes more than 20 minutes

Regurgitation/Vomiting
- Frequent regurgitation (vomits whole feeding or vomits 2 or more times during feed) not associated with burping (Score = 2)

Loose Stools
- Infant has a stool that is at least half liquid (Score = 2)
- When repeating a score within 1 hour after a feeding: use the same stool score obtained before the feeding.

Current Weight = 90% of Birth Weight
- Infant is weighed once a day and then that score is carried through the rest of the day
- Weight is = 90% of birth weight (Score = 2)
- Continue to score until infant gains weight and is > 90% of birth weight
- Use workspace at top of form

Neonatal abstinence syndrome assessment and management[13]



"Adapted From Queensland Maternity & Newborn Guidline"

appropriate pediatric follow-up and for ongoing follow-up at an early childhood health services or with early intervention teams.

- If on medication for NAS, infants require regular reviews to reduce medication and monitor progress.

Mothers follow – up

- Mothers referred back to community case

managers for follow up and ongoing management as per discharge plan.

- Mothers receiving opioid substitution treatment require continuation of dosing immediately post discharge to be organized via opioid substitution clinic.

Role of nurse

- Should assess the women prenatally.
- Should identify the prenatal substance use of women.
- Should identify women's need.
- Assessment of baby by using Finnegan scale for withdrawal symptom.
- Should assess the maternal well being and parenting skills.
- Should circulate the planned discharge plan to a multidisciplinary care team.
- Should do the medical and psycho social assessment of mother and baby before discharge that indicate a stable condition.

Prevention[18]:

- *During Preconception period:* Promote awareness of effects of parental substance use by educating adolescents and adult women about the consequences of unhealthy use of drugs. And encourage no use of alcohol and opioids when planning and during pregnancy.
- *During Antenatal period:* Screening for pregnant women to identify the substance abuse and provide the enhanced the referral services if necessary**.**
- *At birth:* Use consistent and effective protocols for identification of substance exposed newborns and make assurance for developmental child welfare services**.**

Conclusion

There are many unanswered questions regarding the best practices surrounding evaluation, treatment, and dosing for NAS pharmacological interventions. Many research and operational questions remain on how to consistently provide high-quality care in an unbiased and compassionate manner. A high - level approach to NAS can address several levels of intervention, including:

- Surveillance for NAS-affected infants and the sources of maternal opiate use.
- Reimbursement for utilizing screening protocols to detect substance abuse early in pregnancy and withdrawal signs in newborns.
- Developing better measures to ensure follow-up of opioid-dependent women and receipt of comprehensive services.
- Collaborative efforts to strengthen clinical standards for identification, management, and follow-up of NAS-affected infants and their families.

Although much is known about how to manage opioid dependency in pregnancy and NAS, many research and operational questions remain regarding how to consistently provide good quality of care in an unbiased and compassionate manner. State health agencies, along with other health agencies, professional networks, media and community partners, have a unique contribution to make to the knowledge base and support of best practices in caring for women and their children affected by NAS.

Guided by: Prof: Pramilaa R., Principal, Naincy college of nursing, Nainital.

References

1. Availableathttp://www.uvm.edu/medicine/vchip/documents/Iconfull treatment guidelines final.pdf. Accessed 7-31-2013.
2. Kuschel C. Managing drug withdrawal in the newborn infant. *Semin Fetal Neonatal Med.* 2007; 12(2): 127-33.
3. Gillogley KM, Evans AT, Hansen RL, Samuels SJ, Batra KK. The perinatal impact of cocaine, amphetamine, and opiate use detected by universal intrapartum screening. *Am J Obstet Gynecol*. 1990; 163(5 Pt 1): 1535-42.
4. Arria AM, Derauf C, Lagasse LL, Grant P, Shah R, Smith L, *et al*. Methamphetamine and other

substance use during pregnancy: preliminary estimates from the Infant Development, Environment, and Lifestyle (IDEAL) study. *Matern Child Health J*. 2006; 10(3): 293-302.

5. Substance Abuse and Mental Health Services Administration. Results from the 2008 National Survey on Drug Use and Health: National Findings. (Office of Applied Studies, NSDUH Series H-36, HHS Publication No. SMA 09-4434) Rockville, MD: 2009.
6. *JAMA. 2012; 307(18): doi:10.1001/ jama.2012.3951*
7. Kuschel C. Managing drug withdrawal in the newborn infant. *Semin Fetal Neonatal Med*. 2007; 12(2): 127-33.
8. Burgos A, Burke B. Neonatal abstinence syndrome. *Neo Reviews*. 2009; 10(5): e222-9.
9. Levinson-Castiel R, Merlob P, Linder N, Sirota L, Klinger G. Neonatal abstinence syndrome after in utero exposure to selective serotonin reuptake inhibitors in term infants. *Arch Pediatr Adolesc Med*. 2006; 160(2): 173- 6.
10. Black KI, Stephens C, Haber PS, Lintzeris N.Unplanned pregnancy and contraceptive use in women attending drug treatment services. *Australian and New Zealand Journal of Obstetrics and Gynaecology*. 2012; 52: 146-150.
11. Hudek ML, Tan RC. Neonatal drug withdrawal. *Pediatrics*. 2012; 129: e540-60.
12. O'Grady MJ, Hopewell J, White MJ. Management of neonatal abstinence syndrome: a national survey of review and practice. *Arch Dis Child Fetal Neonatal Ed*. 2009; 94: F249-F252..
12. Hudek ML, Tan RC. Neonatal drug withdrawal. *Pediatrics*. 2012; 129: e540-60
13. Queensland Maternity and Neonatal Clinical Guideline: Neonatal Abstinence Syndrome. *MN*10.10-V4-R15
14. American Academy of Paediatrics. Committee on Drugs. Neonatal drug withdrawal. *Paediatr*. 1998; 101(6): 1079-88.
15. Jansson L, Velez M, Harrow C. The opioid exposed newborn: Assessment and pharmacological management. *J Opioid Manag*. 2009; 5(1): 47-55.
16. Abrahams R, MacKay-Dunn M, Nevmerjitskaia V, *et al*. An evaluation of rooming-in among substance-exposed newborns in British Columbia. *J Obstet Gynaecol Can*. 2010; 32(9): 866-71.
17. Neonatal abstinence syndrome guidelines, ministry of health, NSW, North Sydney,Gl-2013-008,sep-2013.
18. Available at http:// masshealthpolicyforum.brandeis.edu/forums/ Documents/Final-Sen-IssueBrief_For-Print.pdf. Accessed 7-31-2013.

IJSN
Volume 3, Number 2

Management of CHARGE syndrome: An Issue of Great Complexity

Thamarai Selvi P.

Abstract

CHARGE syndrome was initially defined as a non-random association of anomalies. In 1981, an expert group defined the major (the classical 4 c"s: Choanal atresia, coloboma of the eye, characteristics of ears, cranial nerve anomalies) and minor criteria CHARGE syndrome. Individual with all 4 major characteristics or three major and three minor characteristics are highly like to have CHARGE syndrome. It affects approximately 1:10,000 births world wide. Recently (2004) researchers have discovered a genetic link, specifically, a strong association between the CHARGE phenotype and a mutation of the CHD7. The official name of this gene is "chromadomain helicase DNA binding protein 7" and CHD7 is the gene's official symbol. The Children with CHARGE syndrome requires intensive medical management as well as numerous surgical interventions.[1]

Keywords: CHARGE; Choanal atresia; Coloboma.

Introduction

CHARGE syndrome is a challenging genetical disorder which affects many areas of the body. It is an acronym whose letter stands for some of the more common symptoms of the condition: **C**oloboma of the eye, **H**eart defects**, A**tresia of the choanae, **R**etardation of growth and development, **G**enital or urinary abnormalities, **E**ar abnormalities and deafness. CHARGE syndrome is not caused by any known exposures during pregnancy.[2] It is usually sporadic with no other affected individual in the family. Individual with CHARGE need supportive, loving homes, early intervention appropriate and challenging educational and vocational programs and preventive medical care. They also need multidisciplinary follow-up.[3]

What Genes are Related to CHARGE Syndrome?

Mutations in the CHD7 gene cause more than half of all cases of CHARGE syndrome. The CHD7 gene provides instructions for making a protein that most likely regulates gene activity (expression) by a process known as chromatin remodeling. Chromatin is the complex of DNA and protein that packages DNA in to chromosomes. The structure of chromatin can be changed (remodeled) to alter how tightly DNA is packaged. Chromatin remodeling is one way gene expression it is regulated during development.[4]

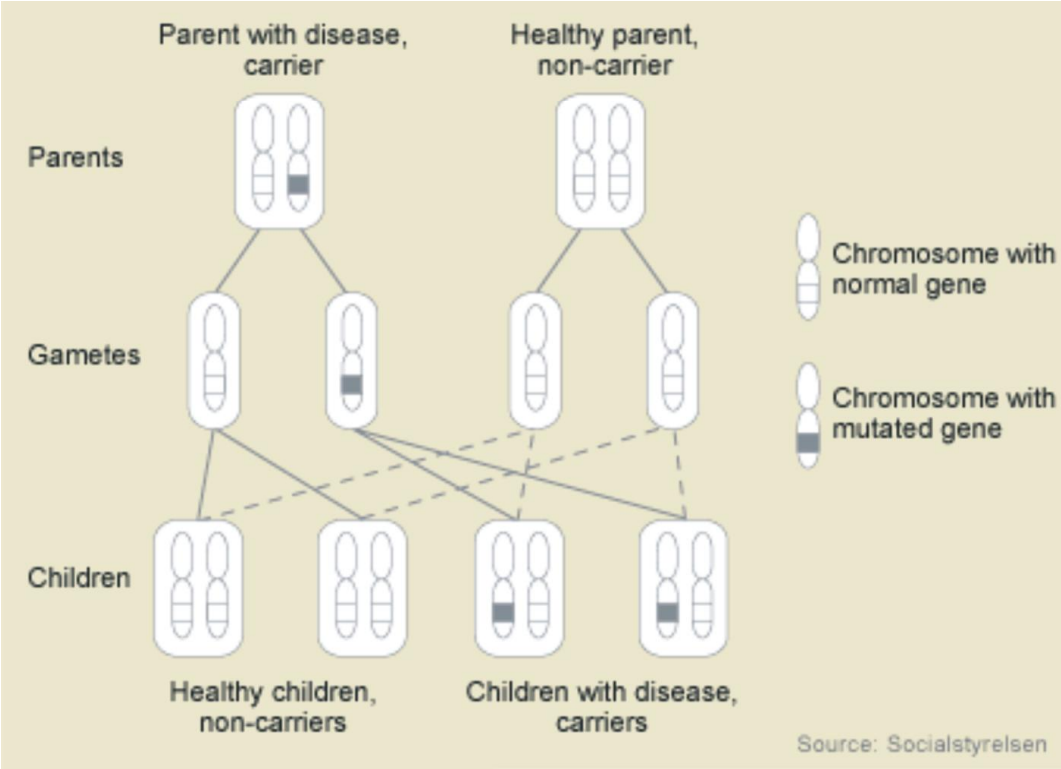
When DNA is tightly packed gene expression is lower than when DNA is loosely packed. Most mutations in the CHD7 gene lead to the production of an abnormally short and non functional CHD7 protein, which presumably disrupts chromatin remodeling and the regulation of gene expression. Changes in gene expression during embryonic development likely cause the signs and symptoms of CHARGE syndrome. Problems occur early in the first trimester, especially between the third and ninth weeks of post conception. There is a crucial stage of embryogenesis, when failure to rupture the primitive bucconasal membrane (35-38 days) brings about choanal atresia. Conotruncal cardiac defects can result from aberrations in cephalic neural crest cell migration during 4th and 5th weeks after conception. The cochlear duct begins to develop around the 36th day, and the eyes develop between days 34 and 44 days of post conception, which is also the time during which the cranial nerves are developing. All the malformations of the CHARGE syndrome occur early during the first trimester.[5, 6]

Author Affiliation: *Assistant Professor in Nursing, Naincy College of Nursing, Jeolikote, Nainital, Uttarakhand, India.

Correspondance: Mrs. Thamarai Selvi P., Assistant Professor in Nursing, Naincy College of Nursing, Jeolikote, Nainital, Uttarakhand, India.

E-mail:pthamus@gmail.com

Figure: Autosomal Dominant Inheritance



Major Criteria (4 c"s)

Features of CHARGE syndrome	Involving features	Frequency (%)
Coloboma of the eye	Coloboma of the iris, retina, choroid, disc: microphthalmia	80-90
Choanal Atresia	Choanal Atresia	50-60
Cranial nerve abnormalities	I-Missing/decreased sense of smell	90-100
	VII- Facial palsy	40
	IX/X- Swallowing difficulties aspiration	70-90
Characteristics of ear abnormalities	External ear(lop up or cup shaped) Middle ear (ottitis media, ossicular malformation) Mixed deafness and cochlear defects	90

Minor Characteristics

Cardio vascular malformation	Cardio vascular malformation-all types especially conotruncal defects (TOF,AV canal defects aortic arch anomalies)	75
Genital hypo plasia	Males-Micropenis, cryptochridism Female- Hypo plastic labia, both: Delayed in complete pubertal development	50
Cleft lip/cleft palate	Oro facial cleft lip /palate	20
Tracheo esophageal fistula	Esophageal atresia Tracheo esophageal fistula (TEF) H-type	15-20
Distinctive CHARGE facies	Characteristics of face-sloping forehead flattened tip of nose	
Growth deficiency	Growth deficiencies Other short stature	15 70
Developmental delay	Developmental delay – delayed motor mile stones language delay, mental retardation	

Where is the CHD7 Gene Located?

Molecular location on qarm of chromosome 8 at position 12.2 (8q12.2).

What are the Clinical Diagnostic Criteria?[7]

The diagnosis is based on the combination of major and mionr criteria.

What is the Challenging Management of CHARGE Syndrome?

It is an extremely complex syndrome involving extensive medical and physical difficulties that differ from child to child. As the child develops, challenging behaviors become more common and require adaptation of educational and therapeutic services, including behavioral and pharmacological intervention. Child spends many months in the hospital and they undergo many surgeries and other treatment.

Eyes: Coloboma of the Eyes

- Coloboma of the iris typically does not affect visual activity.
- Coloboma of the retina and macula usually affect visual acuity.
- Glasses to correct refractive error.
- Tinted glasses for photophobia.
- Occlusive patching for treatment of amblyopia.
- Surgery for strabismus cataracts, retinal detachment, as appropriate.
- Artificial tears or gel to treat corneal exposure.
- Regular ophthalmologic evaluation is necessary.
- Parents should be informed about the risk of retinal detachment and the importance of immediate medical management if there is any change in the vision status of the child.[8]

Choanal Atresia

Bilateral atresia is life threatening in the newborn period and treatment is urgent. Emergency treatment usually consists of placing a plastic airway tube in to the mouth to keep mouth open. This allows baby to breath through mouth.

- Other may require intubation: passing a breathing tube through the mouth and down in to the wind pipe (trachea) so oxygen goes directly in to the lungs.
- Occasionally, it is necessary to do tracheostomy.
- The above all procedures are all temporary. A stent (plastic tube) is placed in nasal passage to keep it open and guarantee adequate air entry.

Unilateral atresia

The child does not have obvious respiratory symptoms, but he or she may have constant runny nose.

- In case of upper respiratory infections hospital care is recommended for small children with the syndrome as they require careful monitoring.[9]

Cranial Nerve Abnormalities

In presence of facial palsy patient should avoid corneal scarring.

Swallowing Difficulties

Alternative Types of Feeding

Swallowing difficulties are badly tolerated by the child as by his/her mother.

- Nasogastric tube: for short periods and for supplementation.
- Gastrostomy tube or button: it is a perfect choice for a long term supplementation if stomach function is intact.
- Jejunostomy tube: preferred choice if severe gastro esophageal reflux is present.
- Swallowing and feeding disorder cause great parental anxiety and parents also have great role to prevent worsening of the feeding problem.[10]

Ear

Outer Ear

- Pinnas can be slightly or significantly deformed. Unless the ear canal is blocked by tissue, deformities of the pinna have almost no effect on hearing.
- Hearing aids needs to be worn.
- In some cases, pinna shape can be improved with surgery.

Middle Ear

- In CHARGE, it is common to have malformed ossicles that cause significant conductive hearing loss and no attempt will be made to correct this problem with surgery.
- Otitis media can cause conductive hearing loss; they need to be monitored on a regular basis.
- Pressure equalization tubes (PE tubes) are often inserted surgically in the ear drum to temporary overcomes the problems brought on by poor Eustachian tube function.
- They typically remain in place from several months to a year.

Inner Ear

- Abnormalities of the inner ear or cochlea are a major cause of permanent hearing loss in CHARGE.
- If the child had severe auditory loss or deafness a cochlear implant (CI) should be considered.
- A cochlear implant consists of a speech processor (a small computer) that is worn behind the ear.
- The cochlear implants convert sound into coded electrical impulses. The signals are conducted by an electrode to the auditory nerve, which the brain interprets as sounds.
- The operation is often performed at an early age, but may be postponed if the child in poor health.
- Children who have deaf and vision problem must find other form of communication at an early stage often develop their own strategies for exploring and learning.[11]

Cardiac Defects

Some heart defects can be totally repaired by surgery. While others can only be improved. Some children end up with no heart problem at all and some will be much better, and others will continue to have problems with their heart. The out come and risk associated with heart surgery in CHARGE depend on the defect, types of surgery. There is no medical management of coloboma of the eye.

Medication

- Digoxin, to help the heart pump stronger.
- Diuretics, to get rid of extra fluid.
- Antibiotics, to prevent infection.
- Anticoagulants, to thin blood.
- Administration of prostaglandin to maintain ductal patency.

Surgery

- To repair major plumbing problem (truncus, interruption of the aorta)
- To close holes in walls(ASD, VSD, AV canal)
- To repair loose valves (regurgitation)
- To repair tight valves (stenosis)
- To increase aorta blood flow (coarctation).[12]

Genitals

Micropenis

- If the underlying cause is thought to be hypogonadotropic hypogonadism, then the treatment is testosterone replacement. This can be given by intramuscularly injection (testosterone enanthate propionate 12.5 -25 mg 3-4 weekly for 3-4 doses)
- Topic testosterone cream 2% is also available and is admitted once or twice daily up to 3 months.
- It is unlikely that hypoplastic labia need any therapy.

Cryptorchidism:

- The optimum timing and mode of therapy to bring down the undescended testis is contentious, even in normal boys.
- Histological changes occur in the cryptorchid testis within 1-2 years.
- Even if the testes are not felt to have much potential for function, many surgeons would still perform orchidoplexy to reduce the chances of detection of malignant change.
- Hormonal therapy with human chorionic gonadotropin may be appropriate and is usually given after the age of the 4 years.
- Traditionally 500-1000 I.U is given intramuscularly twice a week for 5-6 weeks.

This may also cause increased penile growth as well as producing testicular descend.

Delayed/Absent Puberty

Males

- Intramuscular testosterone enanthate or propionate 50-250 mg monthly.
- Oral testosterone undecannoate 20-120b mg daily.

Females

- Etinyloestradiol initially 2 mcg/day, increasing over approximately 2-3 years to 10 mcg/day.[13]

Cleft Lip and Cleft Palate

The treatment for facial clefting involves a series of surgical procedures which many takes place over many years, even through the patient's young adult life. The actual timing and types of treatment takes into the consideration of child's growth and development.

- Some children will need a pre-surgical orthodontic appliance and home therapy to prepare for surgery.
- Surgery is not usually scheduled immediately for cleft lip and palate.
- Many palatal will be repaired between 8 and 12 months of age in a single stage, although surgery on very wide clefs may be delayed until up to 18 months of age.[14]

Esophageal Atresia/Trachea Esophageal Fistula

- Once the baby is born, he/she will often have copious frothy section pouring out of their mouth which requires constant suctioning until esophageal atresia is treated.
- A baby with esophageal atresia cannot eat by mouth until the atresia has been surgically corrected.
- Esophageal atresia/Trachea esophageal fistula can be surgically repaired.
- Before the repair and while it is healing, the baby will need to fed by a gastrostomy tube. This is a tube or opening in which goes directly into the baby's stomach, by passing the esophagus.
- Occasionally esophageal atresia will be repaired and Trachea esophageal fistula (H-type) is not recognized.
- Even after surgical correction, there can be some leakage at the site of the reattachment. The esophagus can tighten up. If this happens it can be treated by dilating the esophagus.[15]

Growth Deficiency

Hormone Therapy

- As most children born with CHARGE have a normal birth weight and length.
- Growth hormone deficiency is treated with biosynthetic growth hormone, which is given by subcutaneous injection usually daily.

Developmental delay

In order to stimulate the child's development and help to compensate for loss of function, children and young people with the syndrome require extensive early habilitation. For this reason the family should be offered early contact with a habilitation team. A habilitation team includes professionals with special expertise in how disability affects everyday life, health and development.

In order to help with motor, mental, language, social and technical development the team offers support, treatment and everyday guidance. Habilitation also includes the assessment and trial of aids as well as advice on adjustments to accommodation. The team also offers information on disability, help offered by the local authority and counseling for patients, parents and siblings. Support and treatment are planned on the basis of the individual's needs. Habilitation varies over time but always takes place in collaboration with those close to the child or young person.[16]

Conclusion

The literature shows that external ear malformations are the strongest indicator of a CHD 7 mutation followed by coloboma, hearing loss, restricted growth, and gonodotrophin deficiency are also strong indicators, but these characters can not be assessed directly after birth and therefore lack utility in early diagnosis. Heart malformations are common in CHARGE syndrome.choanal atresia surprisingly least characteristic of CHARGE

syndrome. It is important to remember that immune compromise is a common and often overlooked characteristic of this population. Precise and rapid genetic diagnosis, while ideal, is less important than multisystem management and multidisciplinary care coordination. Parents of children with CHARGE syndrome should be encouraged to be "in charge" and very active advocates for their children in order to ensure development.

References

1. en.m.wikipedia.org.
2. www.charge syndrome.org.
3. www.charge.org/.../fact_sheet.
4. Ghr.nlm.nih.gov/…/charge syndrome.
5. www.asha.org/.../leader/..f06107a.html
6. http://www.OJRD.com/content/1/1/34.
7. www.ncbi.nlm.nih.gov/pms/articles/pmc 1586184/ Ti.
8. CHARGE syndrome foundation. Eyes. Parent section III-B.inc. 1999.
9. CHARGE syndrome foundation. Choanal atresia. Physician section III-9. Inc. 1999.
10. CHARGE syndrome foundation. Growth. Parent section. Section III -18. Inc. 1999
11. CHARGE syndrome foundation. Ears and hearing: Parent section. Section III-8. Inc. 1999.
12. CHARGE syndrome foundation. Heart. Parent section. Section III-14 Inc. 1999.
13. CHARGE syndrome foundation. Endocrine. Parent section. Section III- 16. Inc.2005.
14. CHARGE syndrome foundation.clefting. Parent section. Section III-10.Inc 1999.
15. CHARGE syndrome foundation. TEA/EA .Parent section. Section III-11. Inc 1999.
16. CHARGE syndrome foundation. Growth. Physician section. Section III-18. Inc 1999.
17. www.socialstyrelsen.com.

Case Study on Marfan's Syndrome and Bentall Procedure

IJSN
Volume 3, Number 2

Amirtha Santhi S.*, Malarvizhi S.**

Introduction

Marfan syndrome is an inherited disorder that affects connective tissue — the fibers that support and anchor the organs and other structures in the body. Marfan syndrome most commonly affects the heart, eyes, blood vessels and skeleton. The damage caused by Marfan syndrome can be mild or severe. If the heart or blood vessels are affected, the condition can become life-threatening.[1]

Case discussion

Mr. X, 44 years old Male, Farmer got admitted in the Cardiac Care Unit(CCU) with the complaints of Breathlessness for past 1 year, and it is increased for the past one month, NYHA (New York Heart Association) dyspnea grade II moved to grade III in past 6 months and extra diastolic murmur was present. After History Collection, Physical Examination and Echo he was diagnosed as a case of Marfan's syndrome, Aortic Root Dilation with Moderate AR (Aortic Regurgitation) and Large Bullae right lung lower and upper lobe.

Past Medical History

Mr. X had lung Tuberculosis 10 years back and was treated with ATT (Anti Tuberculosis Drugs) for 12 months. He is not a known case of diabetes mellitus and hypertension.

Family History

There is no family history of any specific heart disease and other communicable and non communicable diseases.

Personal History

Mr. X had the history of smoking and alcoholism since 15 years old and he stopped both smoking and alcohol at the age of 35. No history of allergic to any food and drugs.

Surgical History

Mr.X has the past history of hydrocele eversion and hemorrhoidectomy. Presently Mr.X has undergone right posterior lateral thoracotomy, right lower and upper lobe bullectomy also had Right side ICD(Inter Costal Drainage) and underwent Bentall's procedure (replacement of the aortic valve, root and the entire ascending aorta) for the aortic dilation.

Investigations on admission

Weight: 59 Kgs

Height : 180 Cms

BMI: 18.2 Kg/ m^2

Arm length: 192 Cms

Physical examination:

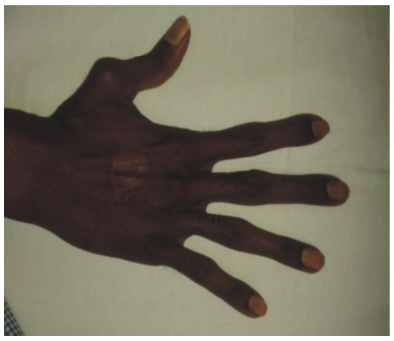
Echo cardiogram : Aortic Aneurysm – proximal ascending aorta and aortic arch, no dissection flap, moderate aortic regurgitation, ejection fraction – 60%, normal left ventricular systolic function, ascending aorta 45 mm, aortic arch 44 mm dilated.

Author Affiliation: *Asst.Prof, ** Vice Dean, College of Nursing, Pondicherry Institute of Medical Sciences, Puducherry, India.

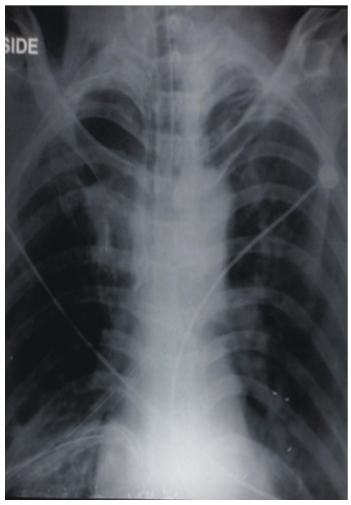
Correspondance: Mrs. Amirtha Santhi S., Asst.Prof, College of Nursing, Pondicherry Institute of Medical Sciences, Puducherry, India.

E-mail: samirthasanthi@gmail.com

Thin fingers



Chest x ray: Large Bullae right lung lower and upper lobe and dilated aorta, patient has chest drainage right side lung



Marfan's Syndrome

Definition: Marfan syndrome is a disorder of connective tissue, the tissue that strengthens the body's structures. Disorders of connective tissue affect the skeletal system, cardiovascular system, eyes, and skin.[1]

Bentall Prosthesis

If the aorta enlarges to a certain size (about 2 inches [5 centimeters]), it is usually treated surgically. A Bentall procedure is a cardiac surgery operation involving composite graft replacement of the aortic valve, aortic root and ascending aorta, with re-implantation of the coronary arteries into the graft. This operation is used to treat combined aortic valve and ascending aorta disease, including lesions associated with Marfan syndrome.[7]

Post operative advice

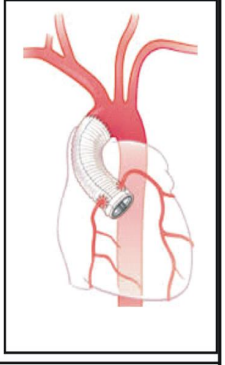
Post operative annual assessment of entire aorta by MRI.[2]

Conclusion

Spontaneous new gene mutations leading to Marfan (less than 1/3 of cases) cannot be prevented. Patients with Marfan's syndrome should consult their doctor at least once every year. Heart related complications may shorten the lifespan of people with this disease. However, many people live into their 60s. Good care and surgery may further extend lifespan.[8]

References

1. Doyle J, Dietz III H. Marfan syndrome. In: Kliegman RM, Behrman RE, Jenson HB, Stanton BF. *Nelson Textbook of Pediatrics,* 19th ed. Philadelphia, Pa: Saunders Elsevier; 2011, chap 693.
2. Fuster, O'Royrke, Walsh, Pool Wilson. *Hurst's The Heart,* Vol.2. Mc Graw Hill Education Publishers; 2008.
3. http://www.mayoclinic.org/diseases-conditions/marfan-syndrome/basics/definition/CON-20025944 mayo clinic diseases and conditions – marfans syndrome
4. Joseph Loscalzo. *Harrison's Cardio Vascular Medicine,*2nd edition. McGraw Hill Education Publishers; 2013.
5. Libby *et al*. *Braunwalds Heart Disease, A Text Book For Cardio Vascular Medicine.* India: Elseviers Publishers Pvt Ltd; 2008.
6. Marie-Josee Paris, PT. The Brigham and Women's Hospital. Inc. Department of Rehabilitation.
7. National Marfan Foundation. Available from: http://www.marfan.org./about/marfan.
8. Pyeritz RE. Inherited diseases of connective tissue. In: Goldman L, Schafer AI, eds. *Cecil Medicine,* 24th ed. Philadelphia, Pa: Saunders Elsevier; 2011,

Book picture	*Patient picture*
Causes: • Defects in a gene called fibrillin-1 • Inherited • Up to 30% of patients have no family history (8,9)	• Patient has no family history
Incidence: 5 in 1,00,000 population worldwide (2)	
Signs and symptoms: • Usually tall with long, thin arms and legs and fingers. • When they stretch out their arms, the length of their arms is greater than their height. • Funnel chest (pectus excavatum) or Pigeon breast (pectus carinatum) • Flat feet • Highly arched palate and crowded teeth • Hypotonia • Joints that are too flexible (but the elbows may be less flexible) • Learning disability • Movement of the lens of the eye from its normal position (dislocation) • Nearsightedness • Small lower jaw (micrognathia) • Spine that curves to one side (scoliosis) • Thin, narrow face • Heart murmurs (4,6)	• Patient is tall and has thin arms and legs and fingers, BMI: 18.2 Kg/ m^{2}- underweight, • Height : 180 Cms, Arm length: 192 Cms • Pigeon breast • Flat feet • Highly arched palate and crowded teeth • Small lower jaw (micrognathia) • Thin, narrow face • Extra diastolic murmur present
Medical Management: • Beta blockers • Losartan - blood pressure lowering drugs to help prevent the aorta from enlarging and to reduce the risk of dissection and rupture (4) **Surgical management:** • Aortic repair: Many physicians have adapted the criterion of a 50 mm maximum aortic root dimension for performing elective surgery in adult patients with Marfan's syndrome.(5, 10)	Losartan 25 mg OD Aortic repair – **Bentall procedure** (Patient had 45 mm dilated aortic arch) 
Complications • Aortic regurgitation • Aortic rupture • Bacterial endocarditis • Dissecting aortic aneurysm • Enlargement of the base of the aorta • Heart failure • Mitral valve prolapse • Scoliosis • Vision problems (3)	• Moderate aortic regurgitation • Aortic Aneurysm – proximal ascending aorta and aortic arch - Ascending aorta 45 mm, aortic arch 44 mm dilated

chap 268.

9. Robyn Backhouse. Nursing considerations for people with Marfan syndrome. Available from http://www.nursingtimes.net/home/specialisms/nutrition/nursing-considerations-for-people-with-marfan-syndrome/204036.article.
10. Varun Bhargava. *Cardiology*: *Clinical Practice.* Nagpur: Ganga Publishers; 2002, 304, 387.

Global Burden of Non-Communicable Diseases

IJSN
Volume 3, Number 2

Asha Thakur*, Anita Goswami**

Abstract

- Non Communicable diseases (NCDs) kill more than 36 million people each year.
- Nearly 80% of NCD deaths - 29 million - occur in low- and middle-income countries.
- More than nine million of all deaths attributed to NCDs occur before the age of 60; 90% of these "premature" deaths occurred in low- and middle-income countries.
- Cardiovascular diseases account for most NCD deaths, or 17.3 million people annually, followed by cancers (7.6 million), respiratory diseases (4.2 million), and diabetes (1.3 million).
- These four groups of diseases account for around 80% of all NCD deaths.
- They share four risk factors: tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets.[1]

Keywords: Non-communicable diseases,Chronic respiratory diseases and Cardiovascular disease.

Introduction

Non-communicable diseases (NCDs), also known as chronic diseases, are not passed from person to person. They are of long duration and generally slow progression.

The four main types of Non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes.

NCDs already disproportionately affect low- and middle-income countries where nearly 80% of NCD deaths – 29 million – occur. They are the leading causes of death in all regions except Africa, but current projections indicate that by 2020 the largest increases in NCD deaths will occur in Africa. In African nations deaths from NCDs are projected to exceed the combined deaths of communicable and nutritional diseases and maternal and perinatal deaths as the most common causes of death by 2030.

Who is at risk of such diseases?

All age groups and all regions are affected by NCDs. NCDs are often associated with older age groups, but evidence shows that more than 9 million of all deaths attributed to Non-communicable diseases (NCDs) occur before the age of 60. Of these "premature" deaths, 90% occurred in low- and middle-income countries. Children, adults and the elderly are all vulnerable to the risk factors that contribute to Non-communicable diseases, whether from unhealthy diets, physical inactivity, exposure to tobacco smoke or the effects of the harmful use of alcohol.

These diseases are driven by forces that include ageing, rapid unplanned urbanization, and the globalization of unhealthy lifestyles. For example, globalization of unhealthy lifestyles like unhealthy diets may show up in individuals as raised blood pressure, increased blood glucose, elevated blood lipids, overweight and obesity. These are called 'intermediate risk factors' which can lead to cardiovascular disease, a NCD.

Author Affiliation: *Lecture, **Professor cum Principal, Netaji Subhash College of Nursing, Palampur, kangra. Pin code- 176 061 Himachal Pradesh, India.

Correspondance: Mrs. Asha Thakur, Lecturer, Netaji Subhash College of Nursing, Palampur, kangra. Pin code- 176 061 Himachal Pradesh, India.

E-mail: nscnpalampur@gmail.com

Risk factors

Modifiable behavioural risk factors

Tobacco use, physical inactivity, unhealthy diet and the harmful use of alcohol increase the risk of or cause most NCDs.

- Tobacco accounts for almost 6 million deaths every year (including over 600 000 deaths from exposure to second-hand smoke), and is projected to increase to 8 million by 2030.
- About 3.2 million deaths annually can be attributed to insufficient physical activity.
- Approximately 1.7 million deaths are attributable to low fruit and vegetable consumption.
- Half of the 2.3 million annual deaths from harmful drinking are from NCDs.

Metabolic/physiological risk factors

These behaviours lead to four key metabolic/physiological changes that increase the risk of NCDs: raised blood pressure, overweight/obesity, hyperglycemia (high blood glucose levels) and hyperlipidemia (high levels of fat in the blood).

In terms of attributable deaths, the leading NCD risk factor globally is elevated blood pressure (to which 16.5% of global deaths are attributed) (1) followed by tobacco use (9%), raised blood glucose (6%), physical inactivity (6%) and overweight and obesity (5%). Low- and middle-income countries are witnessing the fastest rise in overweight young children.

What are the socioeconomic impacts of NCDs?

Poverty is closely linked with NCDs. The rapid rise in NCDs is predicted to impede poverty reduction initiatives in low-income countries, particularly by forcing up household costs associated with health care. Vulnerable and socially disadvantaged people get sicker and die sooner than people of higher social positions, especially because they are at greater risk of being exposed to harmful products, such as tobacco or unhealthy food, and have limited access to health services.

In low-resource settings, health-care costs for cardiovascular diseases, cancers, diabetes or chronic lung diseases can quickly drain household resources, driving families into poverty. The exorbitant costs of NCDs, including often lengthy and expensive treatment and loss of breadwinners, are forcing millions of people into poverty annually, stifling development.

In many countries, harmful drinking and unhealthy diet and lifestyles occur both in higher and lower income groups. However, high-income groups can access services and products that protect them from the greatest risks while lower-income groups can often not afford such products and services.

Prevention and control of NCDs

To lessen the impact of NCDs on individuals and society, a comprehensive approach is needed that requires all sectors, including health, finance, foreign affairs, education, agriculture, planning and others, to work together to reduce the risks associated with NCDs, as well as promote the interventions to prevent and control them.

An important way to reduce NCDs is to focus on lessening the risk factors associated with these diseases. Low-cost solutions exist to reduce the common modifiable risk factors (mainly tobacco use, unhealthy diet and physical inactivity, and the harmful use of alcohol) and map the epidemic of NCDs and their risk factors.

Other ways to reduce NCDs are high impact essential NCD interventions that can be delivered through a primary health-care approach to strengthen early detection and timely treatment. Evidence shows that such interventions are excellent economic investments because, if applied to patients early, can reduce the need for more expensive treatment. These measures can be implemented in various resource levels. The greatest impact can be achieved by creating healthy public policies that promote NCD prevention and control and reorienting health systems to address the needs of people with such diseases.

Lower-income countries generally have lower capacity for the prevention and control of Non-communicable diseases.

High-income countries are nearly four times more likely to have NCD services covered by health insurance than low-income countries. Countries with inadequate health insurance coverage are unlikely to provide universal access to essential NCD interventions.

WHO response

The 2008-2013 *Action plan of the global strategy for the prevention and control of non-communicable diseases* provides Member States, WHO and international partners with steps on how to address NCDs in countries.

WHO is also responding with measures that lessen the risk factors that are associated with NCDs.

- Implementation by countries of the anti-tobacco measures laid out in the WHO Framework Convention on Tobacco Control can greatly reduce public exposure to tobacco.
- The WHO Global strategy on diet, physical activity and health aims to promote and protect health by enabling communities to reduce disease and death rates related to unhealthy diet and physical inactivity.
- The WHO Global strategy to reduce the harmful use of alcohol offers measures and identifies priority areas of action to protect people from harmful alcohol use.
- As requested by the UN Political Declaration on NCDs, WHO is developing a comprehensive global monitoring framework for the prevention and control of NCDs, including a set of indicators and a set of voluntary global targets.
- In response to a resolution (WHA 64.11) of the World Health Assembly, WHO is developing the Global NCD Action Plan 2013-20 to provide a roadmap for the implementation of the political commitments of the UN High-level Meeting. The draft action plan will be up for adoption by the World Health Assembly in May 2013.

Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases 2008-2013 (NCD Action Plan)

1. To raise the priority accorded to non-communicable disease in development work at global and national levels, and to integrate prevention and control of such diseases into policies across all government departments.
2. To establish and strengthen national policies and plans for the prevention and control of non-communicable diseases.
3. To promote interventions to reduce the main shared modifiable risk factors for non-communicable diseases: tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol.
4. To promote research for the prevention and control of non-communicable diseases.

5. To promote partnerships for the prevention and control of non-communicable diseases.
6. To monitor non-communicable diseases and their determinants and evaluate progress at the national, regional and global levels.

References

1. http://www.who.int/mediacentre/factsheets/fs355/en/
2. Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H *et al*. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: A systematic analysis for the Global Burden of Disease Study 2010. *Lancet.* 2012; 380(9859): 2224-2260.

Mody Diabetes

IJSN
Volume 3, Number 2

Ina Thakur*, Anita Goswami**

Abstract

MODY diabetes is Maturity onset diabetes of the young. It is rare, accounting for just 1% - 2% of all diabetes. MODY patients displayed a familial form of noninsulin – depenedent diabetes. Maturity-onset of diabetes of the young, or MODY, is a form of diabetes that is caused by mutations in a number of different genes. MODY is a form of monogenic diabetes. Each different mutated gene causes a slightly different type of diabetes. The most common forms are *HNF1á*-MODY (MODY3) and GCK-MODY (MODY2), due to mutations in the *HNF1A* and *GCK* genes, respectively. MODY is typically diagnosed in late childhood, adolescence, or early adulthood. However, it has been known to develop in adults as late as their 50s. Many people with MODY are misdiagnosed as having type 1 or type 2 diabetes. However, a diagnosis of MODY could change the course of treatment and could help to identify other family members with MODY. MODY forms of diabetes are caused by at least nine different genes, some related to each other in function and some not. The commercially available MODY gene test suite only tests for six of these genes. MODY genes have one major thing in common—they are "monogenic" which means that you only need to inherit one copy of the gene to display the disorder that the gene causes. MODY forms of diabetes were long believed to affect around 2% of all people diagnosed with both type 1 and type 2 diabetes. However, a study of 586 children diagnosed with Type 1 diabetes found that a full 8% of them were actually carrying one of the three most common MODY genes. It is likely that a similar number of people diagnosed with Type 2 may also have one of these genetic forms of diabetes, too.

Keywords: MODY - Maturity onset diabetes of the young; HNF - Hepatocyte Nuclear Factor; IPF - Insulin Promoter Factor; BLK - B-lymphocyte tyrosin kinase.

Introduction

Maturity onset diabetes of the young (MODY)[1] refers to any of several hereditary forms of diabetes caused by mutations in an autosomal dominant gene (sex independent, i.e. inherited from any of the parents) disrupting insulin production.

Maturity Onset Diabetes of the Young affects approximately one or two per cent of people who have diabetes, and may often go unrecognised in its early stages.

It is a form of diabetes that develops before the patient reaches 25.

Author Affiliation: *Lecturer, **Professor cum Principal , Netaji Subhash College of Nursing, Palampur, kangra, Pin code 176061, Himachal Pradesh, India.

Correspondance: Ina Thankur, Lecturer, Netaji Subhash College of Nursing, Palampur, kangra, Pin code 176061, Himachal Pradesh, India.

E-mail: nscnpalampur@gmail.com

It also runs in families, and can pass from one generation to the next. Mody does not always require insulin treatment.

Pathophysiology

The recognised forms of Mody are all due to ineffective insulin production or release by pancreatic beta cells. Several of the defects are mutations of transcription factor genes. One form is due to mutations of the glucokinase gene. For each form of Mody, multiple specific mutations involving different amino acid substitutions have been discovered. In some cases, there are significant differences in the activity of the mutant gene product that contribute to variations in the clinical features of the diabetes (such as degree of insulin deficiency or age of onset).

Signs and Symptoms

There are two general types of clinical presentation.

- Some forms of Mody produce significant

Classification

Type	Gene/protein	Description
MODY 1	hepatocyte nuclear factor 4α	Due to a loss-of-function mutation in the HNF4α gene. 5%–10% cases.
MODY 2	glucokinase	Due to any of several mutations in the GCK gene. 30%–70% cases. Mild fasting hyperglycaemia throughout life. Small rise on glucose loading.
MODY 3	hepatocyte nuclear factor 1α	Mutations of the HNF1α gene (a homeobox gene). 30%–70% cases. Tend to be responsive to sulfonylureas. Low renal threshold for glucose.
MODY 4	insulin promoter factor-1	Mutations of the IPF1 homeobox (Pdx1) gene. < 1% cases. Associated with pancreatic agensis in homozygotes and occasionally in heterozygotes.
MODY 5	hepatocyte nuclear factor 1β	One of the less common forms of MODY, with some distinctive clinical features, including atrophy of the pancreas and several forms of renal disease. Defect in HNF-1 beta gene. 5%–10% cases.
MODY 6	neurogenic differentiation 1	Mutations of the gene for the transcription factor referred to as neurogenic differentiation 1. Very rare: 5 families reported to date.
MODY 7	Kruppel-like factor 11	KLF11 has been associated with a form of diabetes[16] that has been characterized as "MODY7" by OMIM.[17]
MODY 8	Bile salt dependent lipase	CEL has been associated with a form of diabetes[18] that has been characterized as "MODY8" by OMIM.[19] It is very rare with five families reported to date. It is associated with exocrine pancreatic dysfunction.
MODY 9	PAX4	Pax4 is a transcription factor. MODY 9 is a very rare medical condition.
MODY 10	INS	Mutations in the insulin gene. Usually associated with neonatal diabetes. Rare < 1% cases.
MODY 11	BLK	Mutated B-lymphocyte tyrosin kinase, which is also present in pancreatic islet cells. Very rare.
Permanent neonatal diabetes mellitus	KCNJ11 and ABCC8	A newly identified and potentially treatable form of monogenic diabetes is the neonatal diabetes caused by activating mutations of the ABCC8 or KCNJ11 genes which encode subunits of the K_{ATP} channel. < 1% cases. Tend to respond to sulfonylureas.
Transient neonatal diabetes mellitus	ABCC8	Some forms of neonatal-onset diabetes are not permanent. < 1% cases. Tend to respond to sulfonylureas.

hyperglycemia and the typical signs and symptoms of diabetes: increased thirst and urination (polydipsia and polyuria).

- In contrast, many people with Mody have no signs or symptoms and are diagnosed either by accident, when a high glucose is discovered during testing for other reasons, or screening of relatives of a person discovered to have diabetes. Discovery of mild hyperglycemia during a routine glucose tolerance test for pregnancy is particularly characteristic.

Mody cases may make up as many as 5% of presumed type 1 and type 2 diabetes cases in a large clinic population. While the goals of diabetes management are the same no matter what type, there are two primary advantages of confirming a diagnosis of Mody.

- Insulin may not be necessary and it may be possible to switch a person from insulin injections to oral agents without loss of glycemic control.
- It may prompt screening of relatives and so help identify other cases in family members.

As it occurs infrequently, many cases of Mody are initially assumed to be more common forms of diabetes: type 1 if the patient is young and not overweight, type 2 if the patient is overweight, or gestational diabetes if the patient is pregnant. Standard diabetes treatments (insulin for type 1 and gestational diabetes, and oral hypoglycemic agents for type 2) are often initiated before the doctor suspects a more unusual form of diabetes.

Presentation

The following characteristics suggest the possibility of a diagnosis of Mody in hyperglycemic and diabetic patients:

- Mild to moderate hyperglycemia (typically 130–250 mg/dl, or 7–14 mmol/l) discovered before 30 years of age. However, anyone under 50 can develop MODY.
- A first-degree relative with a similar degree of diabetes.
- Absence of positive antibodies or other autoimmunity (e.g., thyroiditis) in patient and family. However, Urbanova *et al* found that about one quarter of Central European Mody patients are positive for islet cell autoantibodies (GADA and IA2A). Their expression is transient but highly prevalent. The autoantibodies were found in patients with delayed diabetes onset, and in times of insufficient diabetes control. The islet cell autoantibodies are absent in Mody in at least some populations (Japanese, Britons).
- Persistence of a low insulin requirement (e.g., less than 0.5 u/kg/day) past the usual "honeymoon" period.
- Absence of obesity (although overweight or obese people can get Mody) or other problems associated with type 2 diabetes or metabolic syndrome (e.g., hypertension, hyperlipidemia, polycystic ovary syndrome).
- Insulin resistance very rarely happens.
- Cystic kidney disease in patient or close relatives.
- Non-transient neonatal diabetes, or apparent type 1 diabetes with onset before six months of age.
- Liver adenoma or hepatocellular carcinoma in Mody type 3.
- Renal cysts, rudimentary or bicornuate uterus, vaginal aplasia, absence of the vas deferens, epidymal cysts in Mody type 5.

Management

Unfortunately, chronic hyperglycemia of any cause can eventually cause blood vessel damage and the microvascular complications of diabetes. The principal treatment goals for people with Mody — keeping the blood sugars as close to normal as possible ("good glycemic control"), while minimizing other vascular risk factors — are the same for all known forms of diabetes.

Tools for management are those for all forms of diabetes: blood testing, changes in diet, physical exercise, oral hypoglycemic agents, and insulin injections. In many cases these goals can be achieved more easily with Mody than with ordinary types 1 and 2 diabetes. Some people with MODY may require insulin injections to achieve the same glycemic control that another person may attain with careful eating or an oral medication.

When oral hypoglycemic agents are used in MODY, the sulfonylureas remain the oral medication of first resort. When compared to patients with type 2 diabetes, MODY patients are often more sensitive to sulphonylureas, such that a lower dose should be used to initiate treatment to avoid hypoglycaemia. Patients with MODY less often suffer from obesity and insulin resistance than those with ordinary type 2 diabetes (for whom insulin sensitizers like metformin or the thiazolidinediones are often preferred over the sulfonylureas).

References

1. What is maturity-onset diabetes of the young (Mody)? National Diabetes Information Clearinghouse (NDIC) (National Institute of Diabetes and Digestive and Kidney Diseases, NIH). Retrieved 2008-07-29.
2. Barry J Goldstein, Dirk Müller-Wieland. Type 2 diabetes: principles and practice. CRC Press; 2008: 529–. ISBN 978-0-8493-7957-4. Retrieved 12 June 2010.
3. This page has previously claimed that MODY is equivalent to type 1 DM; however, the Oxford Handbook of Clinical Medicine states the above.
4. ÿþMODYÿþ (Report). http://www.phlaunt.com/diabetes/14047009.php. Retrieved Jan 25, 2010.
5. Urbanova J, Rypackova B, Prochazkova Z, Kucera P, Cerna M, Andel M, Heneberg P. Positivity for islet cell auto antibodies in patients with monogenic diabetes is associated with later diabetes onset and higher HbA1c level. *Diabetic Medicine*. 2014; 31(4): 466–71. doi:10.1111/dme.12314. PMID 24102923.

6. Maturity Onset Diabetes. *Spark People*. Retrieved Jan 21, 2010
7. Raeder H, Johansson S, Holm PI, *et al*. Mutations in the CEL VNTR cause a syndrome of diabetes and pancreatic exocrine dysfunction. *Nat Genet*. 2006; 38(1): 54–62. doi:10.1038/ng1708. PMID 16369531.
8. Online 'Mendelian Inheritance in Man' (OMIM). maturity-Onset Diabetes of the Young, Type Viii, with Exocrine Dysfunction; MODY8 -609812.

Instructions to Authors

Submission to the journal must comply with the Guidelines for Authors.

Non-compliant submission will be returned to the author for correction.

To access the online submission system and for the most up-to-date version of the Guide for Authors please visit:

http://www.rfppl.co.in

Technical problems or general questions on publishing with ***IJSN*** are supported by Red Flower Publication Pvt. Ltd's Author Support team (http://ww.rfppl.co.in)

Alternatively, please contact the Journal's Editorial Office for further assistance.

Publication -in-Charge
Indian Journal of Surgical Nursing
Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I
Delhi – 110 091, India
Phone: 91-11-22754205, 45796900, Fax: 91-11-22754205
E-mail: redflowerppl@gmail.com, redflowerppl@vsnl.net
Website: www.rfppl.co.in

Guidelines for Authors

Manuscripts must be prepared in accordance with "Uniform requirements for Manuscripts submitted to Biomedical Journal" developed by international committee of medical Journal Editors.

Types of Manuscripts and Limits

Original articles: Up to 3000 words excluding references and abstract and up to 10 references.

Original articles: Up to 2500 words excluding references and abstract and up to 10 references.

Case reports: Up to 1000 words excluding references and abstract and up to 10 references.

Online Submission of the Manuscripts

Articles can also be submitted online from http://www.rfppl.com (currently send your articles through e-mail attachments)

I) First Page File: Prepare the title page, covering letter, acknowledgement, etc. using a word processor program. All information which can reveal your identity should be here. use text/rtf/doc/PDF files. Do not zip the files.

2) Article file: The main text of the article, beginning from Abstract till References (including tables) should be in this file. Do not include any information (such as acknowledgement, your name in page headers, etc.) in this file. Use text/rtf/doc/PDF files. Do not zip the files. Limit the file size to 400 kb. Do not incorporate images in the file. If file size is large, graphs can be submitted as images separately without incorporating them in the article file to reduce the size of the file.

3) Images: Submit good quality color images. Each image should be less than 100 kb in size. Size of the image can be reduced by decreasing the actual height and width of the images (keep up to 400 pixels or 3 inches). All image formats (jpeg, tiff, gif, bmp, png, eps etc.) are acceptable; jpeg is most suitable.

Legends: Legends for the figures/images should be included at the end of the article file.

If the manuscript is submitted online, the contributors' form and copyright transfer form has to be submitted in original with the signatures of all the contributors within two weeks from submission. Hard copies of the images (3 sets), for articles submitted online, should be sent to the journal office at the time of submission of a revised manuscript. Editorial office: **Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi – 110 091, India, Phone: 91-11-22754205, 45796900, Fax: 91-11-22754205, E-mail: redflowerppl@vsnl.net.**

Preparation of the Manuscript

The text of observational and experimental articles should be divided into sections with the headings: Introduction, Methods, Results, Discussion, References, Tables, Figures, Figure legends, and Acknowledgment. Do not make subheadings in these sections.

Title Page

The title page should carry

1) Type of manuscript (e.g. Original article, Review article, Case Report)
2) The title of the article, which should be concise, but informative;
3) Running title or short title not more than 50 characters;
4) The name by which each contributor is known (Last name, First name and initials of middle name), with his or her highest academic degree(s) and institutional affiliation;
5) The name of the department(s) and institution(s) to which the work should be attributed;
6) The name, address, phone numbers, facsimile numbers and e-mail address of the contributor responsible for correspondence about the manuscript;
7) The total number of pages, total number of photographs and word counts separately for abstract and for the text (excluding the references and abstract);
8) Source(s) of support in the form of grants, equipment, drugs, or all of these;
9) Acknowledgement, if any; and
l0) If the manuscript was presented as part at a meeting, the organization, place, and exact date on which it was read.

Abstract Page

The second page should carry the full title of the manuscript and an abstract (of no more than 150 words for case reports, brief reports and 250 words for original articles). The abstract should be structured and state the Context (Background), Aims, Settings and Design, Methods and Material, Statistical analysis used, Results and Conclusions. Below the abstract should provide 3 to 10 keywords.

Introduction

State the background of the study and purpose of thestudy and summarize the rationale for the study or observation.

Methods

The methods section should include only information that was available at the time the plan or protocol for the study was written such as study approach, design, type of sample, sample size, sampling technique, setting of the study, description of data collection tools and methods; all information obtained during the conduct of the study belongs in the Results section.

Reports of randomized clinical trials should be based on the CONSORT Statement (http://www. consort-statement. org). When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975, as revised in 2000 (available at http://www.wma.net/e/policy/l 7-c_e.html).

Results

Present your results in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations. Extra or supplementary materials and technical details can be placed in an appendix where it will be accessible but will not interrupt the flow of the text; alternatively, it can be published only in the electronic version of the journal.

Discussion

Include summary of key findings (primary outcome measures, secondary outcome measures, results as they relate to a prior hypothesis); Strengths and limitations of the study (study question, study design, data collection, analysis and interpretation); Interpretation and implications in the context of the totality of evidence (is there a systematic review to refer to, if not, could one be reasonably done here and now?, what this study adds to the available evidence, effects on patient care and health policy, possible mechanisms); Controversies raised by this study; and Future research directions (for this particular research collaboration, underlying mechanisms, clinical research). Do not repeat in detail data or other material given in the Introduction or the Results section.

References

List references in alphabetical order. Each listed reference should be cited in text (not in alphabetic order), and each text citation should be listed in the References section. Identify references in text, tables, and legends by Arabic numerals in square bracket (e.g. [10]). Please refer to ICMJE Guidelines (http://www.nlm.nih.gov/bsd/uniform_requirements.html) for more examples.

Standard journal article

[1] Flink H, Tegelberg Å, Thörn M, Lagerlöf F. Effect of oral iron supplementation on unstimulated salivary flow rate: A randomized, double-blind, placebo-controlled trial. J Oral Pathol Med 2006;35:540-7.

[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. Acta Odontol Scand 2003;61:347-55.

Article in supplement or special issue

[3] Fleischer W, Reimer K. Povidone iodine antisepsis. State of the art. Dermatology 1997;195 Suppl 2:3-9.

Corporate (collective) author

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. J Periodontol 2000;71:1792-801.

Unpublished article

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. Dent Mater 2006.

Personal author(s)

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

Chapter in book

[7] Nauntofte B, Tenovuo J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O, Kidd EAM, editors. Dental caries: The disease and its clinical management. Oxford: Blackwell Munksgaard; 2003. p. 7-27.

No author given

[8] World Health Organization. Oral health surveys - basic methods, 4th edn. Geneva: World Health Organization; 1997.

Reference from electronic media

[9] National Statistics Online—Trends in suicide by method in England and Wales, 1979-2001. www.statistics.gov.uk/downloads/theme_health/HSQ 20.pdf (accessed Jan 24, 2005): 7-18. Only verified references against the original documents should be cited. Authors are responsible for the accuracy and completeness of their references and for correct text citation. The number of reference should be kept limited to 20 in case of major communications and 10 for short communications.

More information about other reference types is available at www.nlm.nih.gov/bsd/uniform_requirements.html, but observes some minor deviations (no full stop after journal title, no issue or date after volume, etc).

Tables

Tables should be self-explanatory and should not duplicate textual material.

Tables with more than 10 columns and 25 rows are not acceptable.

Number tables, in Arabic numerals, consecutively in the order of their first citation in the text and supply a brief title for each.

Explain in footnotes all non-standard abbreviations that are used in each table.

For footnotes use the following symbols, in this sequence: *, ¶, †, ‡‡,

Illustrations (Figures)

Graphics files are welcome if supplied as Tiff, EPS, or PowerPoint files of minimum 1200x1600 pixel size. The minimum line weight for line art is 0.5 point for optimal printing.

When possible, please place symbol legends below the figure instead of to the side.

Original color figures can be printed in color at the editor's and publisher's discretion provided the author agrees to pay

Type or print out legends (maximum 40 words, excluding the credit line) for illustrations using double spacing, with Arabic numerals corresponding to the illustrations.

Sending a revised manuscript

While submitting a revised manuscript, contributors are requested to include, along with single copy of the final revised manuscript, a photocopy of the revised manuscript with the changes underlined in red and copy of the comments with the point to point clarification to each comment. The manuscript number should be written on each of these documents. If the manuscript is submitted online, the contributors' form and copyright transfer form has to be submitted in original with the signatures of all the contributors within two weeks of submission. Hard copies of images should be sent to the office of the journal. There is no need to send printed manuscript for articles submitted online.

Reprints

Journal provides no free printed reprints, however a author copy is sent to the main author and additional copies are available on payment (ask to the journal office).

Copyrights

The whole of the literary matter in the journal is copyright and cannot be reproduced without the written permission.

Declaration

A declaration should be submitted stating that the manuscript represents valid work and that neither this manuscript nor one with substantially similar content under the present authorship has been published or is being considered for publication elsewhere and the authorship of this article will not be contested by any one whose name (s) is/are not listed here, and that the order of authorship as placed in the manuscript is final and accepted by the co-authors. Declarations should be signed by all the authors in the order in which they are mentioned in the original manuscript. Matters appearing in the Journal are covered by copyright but no objection will be made to their reproduction provided permission is obtained from the Editor prior to publication and due acknowledgment of the source is made.

Abbreviations

Standard abbreviations should be used and be spelt out when first used in the text. Abbreviations should not be used in the title or abstract.

Checklist

- Manuscript Title
- Covering letter: Signed by all contributors
- Previous publication/ presentations mentioned Source of funding mentioned
- Conflicts of interest disclosed

Authors

- Middle name initials provided.
- Author for correspondence, with e-mail address provided.
- Number of contributors restricted as per the instructions
- Identity not revealed in paper except title page (e.g. name of the institute in Methods, citing previous study as 'our study')

Presentation and Format

- Double spacing
- Margins 2.5 cm from all four sides
- Title page contains all the desired information. Running title provided (not more than 50 characters)
- Abstract page contains the full title of the manuscript
- Abstract provided: Structured abstract provided for an original article.
- Key words provided (three or more)
- Introduction of 75-100 words

- Headings in title case (not ALL CAPITALS). References cited in square brackets
- References according to the journal's instructions

Language and grammar

- Uniformly American English
- Abbreviations spelt out in full for the first time. Numerals from 1 to l0 spelt out
- Numerals at the beginning of the sentence spelt out

Tables and figures

- No repetition of data in tables and graphs and in text.
- Actual numbers from which graphs drawn, provided.
- Figures necessary and of good quality (color)
- Table and figure numbers in Arabic letters (not Roman).
- Labels pasted on back of the photographs (no names written)
- Figure legends provided (not more than 40 words)
- Patients' privacy maintained, (if not permission taken)
- Credit note for borrowed figures/tables provided
- Manuscript provided on a CDROM (with double spacing)

Submitting the Manuscript

- Is the journal editor's contact information current?
- Is a cover letter included with the manuscript? Does the letter

1. Include the author's postal address, e-mail address, telephone number, and fax number for future correspondence?
2. State that the manuscript is original, not previously published, and not under concurrent consideration elsewhere?
3. Inform the journal editor of the existence of any similar published manuscripts written by the author?
4. Mention any supplemental material you are submitting for the online version of your article?

Contributors' Form (to be modified as applicable and one signed copy attached with the manuscript)

Indian Journal of Surgical Nursing

Library Recommendation Form

If you would like to recommend this journal to your library, simply complete the form below and return it to us. Please type or print the information clearly. We will forward a sample copy to your library, along with this recommendation card.

Please send a sample copy to:

Name of Librarian

Library

Address of Library

Recommended by:

Your Name/ Title

Department

Address

Dear Librarian,

I would like to recommend that your library subscribe to the **Indian Journal of Surgical Nursing**. I believe the major future uses of the journal for your library would be:

1. As useful information for members of my specialty.
2. As an excellent research aid.
3. As an invaluable student resource.
4. **I have a personal subscription and understand and appreciate the value an institutional subscription would mean to our staff.**
5. Other

Should the journal you're reading right now be a part of your University or institution's library? To have a free sample sent to your librarian, simply fill out and mail this today!

Stock Manager

Red Flower Publication Pvt. Ltd.

48/41-42, DSIDC, Pocket-II, Mayur Vihar, Phase-I

Delhi - 110 091 (India)

Tel: 91-11-22754205, 45796900, Fax: 91-11-22754205

E-mail: redflowerppl@gmail.com, redflowerppl@vsnl.net

Website: www.rfppl.co.in

BOOKS FOR SALE

CHILD INTELLIGENCE

By **Dr. Rajesh Shukla**

ISBN: 81-901846-1-X, Pb, vi+141 Pages

Price: Rs.150/-, US$50/-

Published by **World Informations Syndicate**

This century will be the century of the brain. Intelligence will define success of individuals; it remains the main ingredient of success. Developed and used properly, intelligence of an individual takes him to greater heights. Ask yourself, is your child intelligent! If yes, is he or she utilizing the capacity as well as he can? I believe majority of people, up to 80% may not be using their brain to best potential. Once a substantial part of life has passed, effective use of this human faculty cannot take one very far. So, parents need to know how does their child grow and how he becomes intelligent in due course of time. As the pressure for intelligence increases, the child is asked to perform in different aspects of life equally well. At times, it may be counter-productive. Facts about various facets of intelligence are given here. Other topics like emotional intelligence, delayed development, retardation, vaccines, advice to parents and attitude have also been discussed in a nutshell. The aim of this book is to help the child reach the best intellectual capacity. I think if the book turns even one individual into a user of his best intelligence potential, it is a success.

PEDIATRICS COMPANION

By Dr. Rajesh Shukla

ISBN: 81-901846-0-1, Hb, VIII+392 Pages

Price: Rs.250/-, US$50

Published by **World Informations Syndicate**

This book has been addressed to young doctors who take care of children, such as postgraduate students, junior doctors working in various capacities in Pediatrics and private practitioners. Standard Pediatric practices as well as diseases have been described in a nutshell. List of causes, differential diagnosis and tips for examination have been given to help examination-going students revise it quickly. Parent guidance techniques, vaccination and food have been included for private practitioners and family physicians that see a large child population in our country. Parents can have some understanding of how the doctors will try to manage a particular condition in a child systematically. A list of commonly used pediatric drugs and dosage is also given. Some views on controversies in Pediatrics have also been included. Few important techniques have been described which include procedures like endotracheal intubations, collecting blood samples and ventilation. I hope this book helps young doctors serve children better.

Order from

Red Flower Publication Pvt. Ltd.

48/41-42, DSIDC, Pocket-II, Mayur Vihar, Phase-I

Delhi - 110 091 (India)

Tel: 91-11-22754205, 45796900, Fax: 91-11-22754205

E-mail: redflowerppl@gmail.org, redflowerppl@vsnl.net

Introducing a new sister concerned company of ***Red Flower Publication Pvt. Ltd.***

RF Library Services Pvt. Ltd.

RF Library Services Pvt. Ltd. is a global market leader in managing professional information. We develop and deliver innovative services that enable the use of knowledge to its full extent. As the only information Services Company to be globally and we play a key role in today's complex information marketplace. Founded in 1985 as a registered company under sub-section (2) of section 7 of the Companies Act, 2013 and rule 8 of the Companies (Incorporation) Rules, 2014, the business draws on more than a decade of experience within the information industry. With this knowledge, we service the needs of thousands of customers from over 30 countries. We are a division of Red Flower Publication Pvt. Ltd.

Where we are based

RF Library Services Pvt. Ltd headquarters is in Delhi, India, and has a representative office in Cochin. Visit "Our Offices" page to locate your nearest regional office.

RF Library Services Pvt. Ltd.
D-223/216, Laxmi Chambers, Laxmi Nagar,
Near Laxmi Nagar Metro Station,
Delhi-110092(India)
Tel: 011-22756995, Fax: 011-22756995
E-mail: rflibraryservices@vsnl.net, rflibraryservices@@gmail.com
Wesite: www.rf-libraryservices.com

Branch Office

RF Library Services Pvt. Ltd.
3rd Floor, City Point Building, Jose Junction
Chinmayananda Road, South Ernakulam
Cochin - 682016, Kerala (India)
Tel: 0484-2373399, Mob: 8606486058
E-mail: rfpkochi@gmail.com, www.rf-libraryservices.com

Call for Reviewers

Indian Journal of Surgical Nursing (ISSN 2277-467X) is the professional, peer-reviewed journal for nurses in surgical nursing practice. Written by and for surgical nurses, the journal features clinical articles covering a wide variety of surgical procedures. The articles are including patient education techniques and research findings in all issues of Indian Journal of Surgical Nursing. Indian Journal of Surgical Nursing is committed to the advancement of adult health/ medical-surgical nursing practice. IJSN supports adult health/medical-surgical nurses as they strive for excellence in patient care, private practice, and outpatient health care settings in different types of locations in the world.

Readership: Scientists, scholars, professionals, practitioners, faculty, students in the field of surgical nursing

Scope: Indian Journal of Surgical Nursing reaches all members of the Indian College of Nursing, directors of nursing, major public and private hospitals, nursing managers, educators, areas of community health care, nursing associations, nursing faculties at all universities and most aged care facilities throughout India.

Indexing and Abstracting services: Google Scholar, ProQuest, i-scholar.in

One must have at least five years of experience in the field after completion of the education in that field and at least five original research papers in journal(s).

Please note that the acceptance of your application will be at the sole discretion of the editors.

Please provide your complete information and affiliation in brief through e-mail or you can register your self on our website www.rfppl.org.

For more information, please contact:

Publication–in-charge

Red Flower Publication Pvt. Ltd.

48/41-42, DSIDC, Pocket-II

Mayur Vihar Phase-I

Delhi – 110 091

India

Phone: 91-11-22754205, 45796900, Fax: 91-11-22754205

E-mail: redflowerppl@vsnl.net, redflowerppl@gmail.com

Website: www.rfppl.co.in