NARCHI BULLETIN

MAMC, Issue 2, July 2021

Adolescent Gynecological Concerns: Time to ponder

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Contents

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From The President's Pen

Warm greetings to all esteemed members of NARCHI

I hope and wish that during these unprecedented times you and your families are safe and healthy!

We entered this year with the hope that the pandemic would end fast and we would be returning to normalcy but the second wave of COVID-19 has proved to be more disastrous. Many of us have faced the loss of our near and dear ones. Inspite of all adversities, we have emerged stronger and more determined than ever to continue our commitment towards caring for women and children, of learning and imparting knowledge on the virtual platform through CMEs, various cultural activities and via our e-bulletin. This time the NARCHI e-bulletin for the month of July has focussed on a less touched segment of a woman's life - "Adolescence" and its related gynaecological concerns. It should truly be of great interest and immense value to our readers.

We deeply mourn the parting of three of our beloved and cherished colleauges, Dr Prabha Manchanda, Dr Ghai Bhandari and Dr Shashi Prateek and pay homage to the departed souls.

I also take this opportunity to announce the arrival of the first NARCHI e-conference bonanza on the 27th, 28th and 29th of August 2021 and invite your wholehearted participation.

Let's hope this tradition of 'caring' and 'sharing' continues to reach newer heights.

Looking forward to your continued support.

Dr Asmita M Rathore

From The Secretary's Desk

Dear NARCHI members,

Greetings!

We have overcome the limitation of connecting with each other by resorting to the virtual platform. The silver lining in the cloud is that we are able to connect to a wider audience on the virtual platform and education has become more equitable.

We extend a warm welcome to all for the **27th NARCHI Annual Conference- NARCHI DELCON** on **27th, 28th and 29th August 2021.** At the 27th Annual Conference NARCHI Delhi we have the ultimate privilege of bringing our community together on a vibrant online platform. This academic feast aims to deliver comprehensive information to keep up with the changing aspects of women's health. The Organising Committee is working tremendously hard to create an ever diverse, inspiring and innovative programme that sheds light on important facets of obstetrics and gynecology. The Scientific Programme is a blend of seminars, workshops, discussions, debates, paper and poster sessions and quiz for young professionals.

Hope to see you at this academic bonanza!

Adolescence is a time of major transition, characterized by marked changes in the body, psychology and sexual behaviour. Hence, adolescent girls constitute a vulnerable group, particularly in India where female child is discriminated in the society. This issue of NARCHI bulletin '*Adolescent gynecological concerns: Time to ponder'* brings forth the challenges and breakthroughs/innovations in adolescent health.

With an estimated 200 million adolescents in India who comprise one-fifth of the total Indian population investing in adolescent health is need of the hour. A high prevalence of reproductive morbidities has been observed among adolescent girls but heath care seeking behaviour is disturbingly low. Various aspects of reproductive health in adolescents like menstrual hygiene, contraception, body image issues and PCOS have been addressed. We aim to tread some unchartered territories by introducing the concept of gender dysphoria. The ever-increasing social acceptance and destigmatization of children and adolescents with gender dysphoria have resulted in an increased number of transgender individuals seeking care.

Happy reading!

Dr Sangeeta Gupta **Dr Niharika Dhiman** **Dr Chetna Arvind Sethi**

From The Editorial Board

Warm greetings from the Editorial team!

We present this second issue of the NARCHI e-bulletin amidst our continuous battle against the deadly Corona virus in the ongoing pandemic. We acknowledge the tireless efforts of our doctors and pay homage to the departed souls who put up a brave fight against the disease.

We have dedicated this issue to the 'Adolescent girl' and the problems she faces as she leaves her childhood behind to enter into an uncertain womanhood. 'Adolescence' is that period of transition where physical, sexual, mental and psychological remodelling occurs - a specialized period which has never been explored optimally nor has been given due importance. A period of turbulence and rebellion which has to be negotiated with empathy, love and understanding. Comprising about 16.5 % of the total world population, we believe that focussing on today's adolescents and their health is an investment which will boost preventive healthcare in tomorrow's adults.

We bring to you simple articles on a few common problems faced by our adolescents, written by faculty from across Delhi and outside, who have a keen interest in their subject and we thank each one of them for their contribution.

Dr Deeksha who is renowned for her work on menstrual hygiene has lucidly described the importance and components of 'menstrual hygiene and health'. Dr Pinkee Saxena has excellently illustrated on "Body image issues" and Dr Ashima on 'PCOS and Hirsutism', both ubiquitous among adolescents. Dr Deepti Goswami gives a wonderful introductory insight into the future world of 'Gender Dysphoria'. Dr Nidhi Garg, under the mentorship of Dr Deepti Goswami has done full justice in elaborating upon the most common gynaecological problems faced by our adolescents, the menstrual problems of Abnormal Uterine Bleeding and Amenorrhea. Last but not the least, Dr Arundhati and Dr Harvinder have penned a very informative article on 'Sex education and Contraception' beautifully highlighting the extreme importance and need for sex education at an appropriate age and the various contraceptive choices available to an adolescent.

We dwell on Maya Vishwakarma, the 'Pad woman of India' and Leona Chalmers, the woman pioneer who made the menstrual cup a reality in our section on women pathbreakers. To acknowledge the hard work put in by the authors and to encourage the readership of our bulletin, there is a Quiz on the articles published in this bulletin. We also bring to you a colourful kaleidoscope of all the events and activities undertaken by NARCHI, Delhi in the past few months.

Finally, there cannot be a better platform than this to invite and welcome one and all to the upcoming academic bonanza, the **27th Annual NARCHI conference - 'NARCHIDELCON 2021'** on the 27th, 28th and 29th August 2021, during which, we promise a vibrant amalgamation of academics and fun. All details are enclosed within.

Adolescence……

.....too young for half the things you want to do

.....too old to do the other half!!

Wishing you all a healthy and safe read!!

Best wishes

Narchi Editorial Team

Dr Sangeeta Bhasin Dr Shakun Tyagi Dr Poonam Kashyap Dr Reena Rani


27th Annual Conference of NARCHI, Delhi Chapter
NARCHIDELCON
2021
VIRTUAL
Conference
Theme : Women's Health: Challenges & Breakthroughs
27th, 28th & 29th
August,2021
(Friday, Saturday & Sunday)
Scientific Brochure
5
Pre-Conference
Workshops
Quiz
Free
Communication
Scientific
Session
Organized by:
NARCHI Delhi
& Department of Obstetrics & Gynecology,
Maulana Azad Medical College &
Lok Nayak Hospital, New Delhi
www.narchidelcon.com

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Dr Asmita M Rathore

Organising Co-Chairperson

Dr Gauri Gandhi

Organising Secretary

Dr Sangeeta Gupta

Organising Joint Secretary

Dr Niharika Dhiman

Dr Chetna A Sethi

Scientific Programme Highlights

I. Fresh Look at Intrapartum & Neonatal Care: Oration by Sir Sabaratnam Arulkumaran

II. Vaccination: A Weapon for Eliminating the Two Pandemics-COVID & Cancer

III. Early Pregnancy Screening Protocols: What's New

IV. Evolving Care of Transgenders

V. Ovarian Rejuvenation and Ovarian Preservation

www.narchidelcon.com

5 Pre-Conference Workshops

No Separate Registration Fee for Workshop

Day 1 | Friday, 27th August 2021

Pre Lunch Workshops

Hall-A
(Time: 9.30 AM - 12.30 PM)
Contraception: A Responsible Choice

Post Lunch Workshops

Hall-A
(Time: 2.30 PM - 6.00 PM)
Critical Care in Obstetrics

Day 2 | Saturday, 28th August 2021

Pre Lunch Workshops

Hall-A
(Time: 9.00 AM - 12.00 PM)
Hemovigilance: Obstetric Perspective

Pre Lunch Workshops

Hall-B
(Time: 12.00 PM - 3.00 PM)
Optimizing CS Rates: Utilizing Improvement Methodology

Post Lunch Workshops

Hall-A
(Time: 2.30 PM - 5.30 PM)
Patient Safety- An Emerging Healthcare Priority

Quiz

Day 1 | Friday, 27th August 2021

(Time: 12.30pm-2.00pm)

Endocrinological Disorders in Obstetrics & Gynaecology
(For Residents only)

Conference Registration is mandatory for participation

www.narchidelcon.com

Announcement for Free Communications

Topics:

1.Perinatal Medicine
2.Benign Gynaecological Disorders
3.Miscellaneous

All case reports will be taken in a separate E- Case Report category.

Last Date for Submission:
10th August 2021

Instructions:

1) A structured abstract not more than 250 words, including aims and objectives, materials & methods, results, and conclusion.
2) Typed in Times New Roman, double space with the font size 12.
3) Presenting author should be a NARCHI member and registered for the conference.
4) Presenting author can present only one paper or one poster.
5) The paper may be selected for Oral or Poster presentation by the scientific committee.

Registration Details

Category	Till 15th August	16th August Onwards
Member	INR 1500	INR 2000
Non- Member	INR 2000	INR 2500
PG Student/ Trainee/ SR	INR 1000	INR 1500
NARCHI Life Membership and Conference Registration (For Delegates)	INR 4000	INR 4500
NARCHI Life Membership and Conference Registration (PG Student)	INR 3500	INR 4000

Register At: www.narchidelcon.com

For Any Information, Contact

Mr. Shivam Verma: +91 8810265272
Mr. Jai Mohan: +91 9811504740

Conference Secretariat

Department of Obstetrics & Gynaecology,
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E-mail: narchidelcon@gmail.com
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New Delhi – 110017
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SCIENTIFIC PROGRAM

29th August, 2021 | Sunday | Day-3

Time	Topic	Speaker
09.15 - 09.45 AM	**Treasuring the Ovaries**	
	Ovarian Rejuvenation	Dr Surveen Ghumman
	Ovarian Preservation	Dr Leena Wadhwa
09:45 - 10.30 AM	**Panel Discussion:** Evidence Based Use: Progesterones And Antenatal Steroids **Panelists:** Dr SN Basu, Dr Manju Khemani, Dr Indu Chawla Dr Mamta Dagar, Dr Chetna Sethi	**Moderators:** Dr Manju Puri Dr Niharika Dhiman
10:30 - 11:00 AM	**Leelawati Ghai Oration** Psychosocial Well-Being In Journey To Motherhood	Dr Achla Batra
11:00-11:30 AM	**INAUGRATION** **Chief Guest:** Dr S Dawn, Secretary General, NARCHI India	
11:30 AM - 12:00 PM	**Preventive Obstetrics**	
	Early Pregnancy Screening Protocols: Setting The Priorities Right	Dr Sangeeta Gupta
	Every Baby Counts: Stillbirth Prevention & Prediction	Dr Chanchal Singh
12:00 - 12:30 PM	**Transgenders: Moving Towards Comfort**	
	Transgender Care - An Overview	Dr Asmita Rathore
	Role Of Gynaecologist In Transgender Health	Dr Anjela Aneja
12:30 - 1:00 PM	**Embracing The Transitions**	
	Disorders Masquerading As PCOS: Diagnostic Algorithms For Adolescents	Dr Kiran Guleria
	Urogynaeological Issues In Climacteric And Beyond	Dr Ranjana Sharma
01:00 - 01:40 PM	**Dr S K Das Oration** Fresh Look at Intrapartum & Neonatal Care	Prof Sabaratnam Arulkumaran (UK)
01:40 - 02:10 PM	**LUNCH**	
02:10- 02:30 PM	**Keynote:** Vaccination: A Weapon For Eliminating The Two Pandemics- COVID & Cancer	Dr Neerja Bhatla
02:30 - 03:15 PM	**Towards The Newer Horizons**	
	Learn To Live With It: OBGY Services In Post- COVID Era	Dr Amita Suneja
	MTP Act Amendment: Implications For Clinical Practice	Dr Vijay Zutshi
	NEEV (The Neonatal Early Evaluation Vision)	Dr Seema Kapoor
03:15 - 04:00 PM	**Panel Discussion:** Can It Harbor Malignancy - Decision Making **Panelists:** Dr Reena Yadav, Dr Dinesh Kansal, Dr Aruna Nigam, Dr Neena Bahl, Dr Seema Singhal	**Moderators:** Dr Gauri Gandhi Dr Y M Mala
04:00 - 04:30 PM	**Debate** Low Risk Pregnancy - Should We Go Beyond EDD	**For:** Dr Jyoti Bhaskar **Against:** Dr Jaya Chawla
04:30 PM	**VALEDICTORY**	

27th Annual Conference of NARCHI, Delhi Chapter

NARCHIDELCON 2021

Organized by:
NARCHI Delhi & Department of Obstetrics & Gynecology, Maulana Azad Medical College & Lok Nayak Hospital, New Delhi

27th, 28th & 29th August, 2021 | Virtual Conference

Theme : Women's Health: Challenges & Breakthroughs

Registration Form

DELEGATE DETAILS

Title: Prof. ◯ Dr. ◯ Mr. ◯ Ms. ◯ Mrs. ◯

NARCHI Member: Yes ☐ No ☐

Gender: Male ☐ Female ☐

First Name **Last Name**

Institution / Affiliation:

Address:

Country: **City:** **State:** **Pin:**

Mobile No. with Country Code: **Email:**

Pre Conference Workshops (Please Tick Your Preferred Workshops)

Friday, 27th August 2021

Pre Lunch Workshops

☐ Contraception: A Responsible Choice (Time: 09.30am-12.30pm) Hall- A

Post Lunch Workshops

☐ Critical Care in Obstetrics (Time 2.30pm-6.00pm) Hall- A

Saturday, 28th August 2021

Pre Lunch Workshops

☐ Hemovigilance: Obstetric Perspective (Time: 9.00am - 12.00Noon) Hall- A

☐ Optimizing CS Rates: Utilizing Improvement Methodology (Time: 12.00Noon-03.00pm) | Hall-B

Post Lunch Workshops

☐ Patient Safety- An Emerging Healthcare Priority (Time: 2.30pm - 5.30pm) Hall- A

Registration of Conference Is Mandatory To Attend Workshops

Registration Fees

Category	Till 15th August	16th August Onwards
Member	INR 1500 ☐	INR 2000 ☐
Non- Member	INR 2000 ☐	INR 2500 ☐
PG Student/ Trainee/ SR	INR 1000 ☐	INR 1500 ☐
NARCHI Life Membership and Conference Registration (For Delegates)	INR 4000 ☐	INR 4500 ☐
NARCHI Life Membership and Conference Registration (PG Student)	INR 3500 ☐	INR 4000 ☐

Certificate from HOD is Mandatory for PG Student / Trainee/ Residents

1. To Register Online Visit: www.narchidelcon.com

2. Bank Transfer Details

Account Name / Cheque / Draft to be
Made in the Name of - Conferences International
Bank Name - Axis Bank
Current Account Number - 920020017754100
IFSC Code - UTIB0004374

Note: Kindly email us bank deposit slip / UTR number along with duly filled registration form once you have made the payment

www.narchidelcon.com | narchidelcon@gmail.com

Conference Secretariat

Department of Obstetrics & Gynaecology,
Maulana Azad Medical College &
Lok Nayak Hospital, Ph : 08368199481,
9968604420, 09818404456
Jai Mohan: 9811504740

Virtual Conference Manager & Communication Address

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Savitri Nagar, New Delhi :110017
M: +91-8810265272

NATIONAL ASSOCIATION FOR REPRODUCTIVE AND CHILD HEALTH OF INDIA (NARCHI)

DR. C.S. DAWN, INDIAN COLLEGE OF MATERNAL & CHILD HEALTH (ICMCH)

25B, C.I.T. ROAD , ENTALLY, KOLKATA - 700014, WEST BENGAL
Phone: 91-33-2249 5767/ 0-974877 5767 Fax: 91-33-2249 5767
email : narchihq@gmail.com Website : www.narchi.org

Life Membership Application Form

Fix your photo here With signature

To,
The Secretary General, NARCHI
25B, C. I. T. Road, Kolkata - 700 014

Sir,
I would like to apply for the Life Membership of **NATIONAL ASSOCIATION FOR REPRODUCTIVE AND CHILD HEALTH OF INDIA.**

I am remitting Demand Draft/ CTS cheque /RTGS/Cash for Rs. 3000/- in favour of **NARCHI DELHI BRANCH** for the membership (for MBBS doctors).
(For all others including Ayush Doctors Life Membership fee is Rs.1000/-).

NAME (in Block Letters) **:**

ADDRESS (in Block Letters) :

City / Town : **Pin Code** (Compulsory):

State / Province : **Phone/ Cell Phone**

Email : **Date of Birth**

NARCHI Branch : **(where wish to be included)**

EDUCATIONAL QUALIFICATION

☐ MBBS **Year** ☐ D.G.O. **Year** ☐ M.D. (Obs / Gyn) **Year**

☐ Paediatrics MD/DCH **Year** ☐ M.S. Surgery **Year** ☐ Others **Year**

QUALIFICATION for non - physician Profession

Teaching Experience (Year)

PRESENT APPOINTMENT

Signature _____

Payment details :

☐ Cheque / Draft No. Date : Bank & Branch :

☐ Cash

Bank details for RTGS or payment transfer

A/c Name : NARCHI DELHI BRANCH Bank Name : CENTRAL BANK OF INDIA

Branch : LADY HARDINGE MEDICAL COLLEGE AND HOSPITAL BRANCH, Account No. :

3529874897 Account Type : CURRENT IFS Code : CBIN0283462

Menstrual Health & Hygiene Education for the Indian Adolescent

Deeksha S Chadha
MD (Preventive Medicine), Founder & MD Hygiene Preventive Health Consultancy; Founder- The Purple Nest, Medical Director, Sirona Hygiene Foundation

The ability to manage menstruation in a healthy and hygienic way is one of the basic human rights for women, girls, transgender men and other non-binary menstruators across the globe. Together, they account for more than half of the planet's population. Menstrual health management (MHM) is closely associated with the United Nations Global Development goals number 3 (Good health and wellbeing), 4 (Quality education), 5 (Gender equality), 6 (Clean water and Sanitation) 8 (Decent work and economic growth) and 12 (Responsible consumption and production).[1] Menstrual health & hygiene (MHH) education and an enabling environment (access to sanitary products, water, toilets and proper disposal) are the foundation stones of every MHM program across global organizations and governments.

Culturally, menstruation is a subject still taboo within most families in India and therefore not discussed openly. Instead of it being a welcome occasion in the life of a young girl, foraying into womanhood is often perceived as a curse or a difficulty. The average age for menarche in India is around 13 years with much variation across geographic locations and demographic profiles.[2] Studies show that nearly half of the girls do not know about menstruation till the time their periods start.[3] A study done in Bangalore found that 56.8% adolescent girls felt that "menstruation poses a huge physical and psychological burden" in their lives.[4]

While most young girls might benefit greatly if they could have a free and frank discussion on the subject with their mothers, socio-cultural barriers as well as limited awareness on the subject among mothers themselves, leaves many questions unanswered for the adolescents.

Teachers, health care workers and doctors are often looked upon to fill this gap in the life of young girls and therefore must have an understanding of not just the medical aspects of menstruation, but also be aware about the socio-cultural contexts of the subject.

When to Talk to Adolescents About Menstruation?

A young girl will likely achieve menarche within 2-3 years of thelarche.[5] It is logical and in the interest of everyone to educate a young girl before she starts with her periods so that she is mentally prepared for it. This is not the only reason though. What is significant about the timing of the "talk" is that a pre-pubertal adolescent is yet to adopt any fixed behaviour and is amenable to adopt any new behaviour. Yet, many families do not discuss sexual development related issues with their adolescents or postpone the discussion in the hope of delaying a conversation often perceived "uncomfortable" as talking about menstruation is often linked to the subject of reproduction and sex.[6] What possibly complicates matters further is that many mothers do not wish to introduce their daughters to the concept early. As per a statistic quoted in the MHM guidelines (2015), 47% mothers are not in agreement with the fact that their daughters should know about menstruation before onset of periods.[7] The chance encounter of the early adolescent with the health care provider must be treated as an opportunity to examine for pubertal changes and to educate the parent about the need for menstrual hygiene awareness in the child.

In the current scenario, in addition to government programs, many private organizations are coming forward to introduce the subject to students in school. As welcome as the step is, adolescents out of the school system are often missed in the process. As many as 23% of the adolescent girls in the school system will drop out on account of menstruation and further 24% will miss school on days of menstruation.[3,8] Part of the solution might lie in educating the educators as well. An effort must be made in ensuring that every adult in the life of an adolescent is first made aware about menstrual health and the technique to educate the adolescents about it.

Explaining The Concept of Menstrual Cycle to a Young Adolescent

From the myth about Copper-T disappearing inside

the female body to less menstrual bleeding being a cause of obesity, health providers are well aware of the variety of myths associated with every aspect of women's health in the country.[9] These myths that last the lifetime of any women are often rooted in socio-cultural misconceptions and a complete lack of self-awareness among women about how their own bodies operate. Educating the adolescent girl about the correct reason and mechanism for menstruation can lay the foundation on which health education can build up later. Explaining in an easy to understand language, the educator must introduce the anatomy of a female reproductive system and its relative size and position inside a human body. In the experience of the author, the large diagrams of reproductive tract on the black board often confuse young minds into believing the size of these organs to be as big as their entire abdomen. The author also finds that the concept of a menstrual cycle is best explained to a young mind comparing the process to a bird building its nest. "*Just like a bird layers twigs after twigs in it's nest just before it knows it is to lay its egg, the uterus of a female body layers tissue after tissue in anticipation of an ovum. In the absence of an ovum turning into a baby, the linings of layers are shed in the form of menstrual blood. The cycle continues each month in a similar fashion*". The reason this analogy finds an easy connect with a young mind, is that for one, it makes the cycle a normal natural occurrence. Secondly, it gives a real purpose and meaning behind this natural phenomenon, which most girls otherwise struggle with. There is an additional benefit of opening this conversation point. By creating awareness about the fact that menstrual blood has origins in the layers that would birth a human life, the educator can lay emphasis on the fact that nothing can be more pure than the birthplace of a human life and thus, menstrual blood is not impure (as many myths would have them believe).

The '5 Ps for a Happy and Healthy Period'

When discussing the subject further with the adolescent, it is natural to wonder how much information to discuss and how to communicate the concepts about MHM with ease and accuracy. Here we present a simple technique of "5 Ps for a happy and healthy period" of speaking to adolescents on how to manage periods. The key advantages of the technique are its ease of delivery and no requirements for elaborate presentations. It also enables the educator to touch upon all the key points in a health talk within a limited duration of time.

1st P: Palms

The very foundation of personal hygiene, hand washing, is very important in the management of menstrual hygiene also. The adolescent should be made aware about the importance of washing hands both *before*, as well as *after* using any period product. It is useful to also mention about keeping nails neat and trimmed, a simple and important point for girls deciding to use tampons and menstrual cups as these involve insertion of the product in the vagina.

2nd P: Product

While the earlier approach has been to educate about the sanitary napkins alone, the new ideology is to approach with *a basket of choices*, similar to the *cafeteria approach* used with contraceptives in family planning.[10] Introducing the adolescent to all products currently available for use, and defining their advantages and disadvantages, enables them to not only make the best choice for themselves, but also makes them feel empowered. Adolescence is a stage linked with a feeling of rebellion and offering a choice instead of enforcing one, increases the odds of acceptance of methods. The upcoming generations, especially in the urban areas, are increasingly internet savvy, globally aware and sensitive towards the environment. While sanitary napkins and tampons are disposable products that have been in the market for a while now, reusable products like period panties, reusable cloth napkins and menstrual cups are also available in the country now for managing periods. The basic idea is to introduce each product, while demonstrating its use, to ensure that the adolescent understands its key benefits and drawbacks. The reusable products have a particular advantage in the sections of society impacted by poverty. The reusability of these products make them financially sustainable for the families. An important point to emphasize about the reusable products is the process of their cleaning and sterilization to ensure that repeated use is safe.

3rd P: Proper Disposal

As more and more schools become familiar with incinerators for sanitary products, students will have to be educated about disposing the sanitary products into the incinerating bins. Even in the absence of an incinerator, adolescents must be made aware about where to dispose of the used pads and tampons and not to flush them as the super absorbent polymers (SAP) in these products may cause blockage of sewerage systems in cities. For the reusable products, once their life cycle ends, they need to be disposed of

as well. Cloth products can be washed one last time and either put out for composting or thrown away with municipal waste. Menstrual cups can be

4th P: Pain during periods

The only thing more difficult to comprehend than menstrual bleeding is the pain associated with periods. For adolescents, where often early anovulatory cycles may be relatively pain free, there is always anxiety due to the anticipatory pain. Information about home remedies for pain resolution, timely and appropriate help seeking if the pain disrupts routine activities and acceptance or tolerance of some degree of discomfort can prepare them better for the days ahead. Often, even when girls can manage the periods well, they still avoid school and sports on first few days of the cycle on account of the pain they may have. This inculcates an early attitude of perceived weakness on account of gender and a significant loss of opportunity later in life. While describing period pain as a normal phenomenon, it is equally important to establish that excessive pain should not be accepted as part of growing up. Pain during menstruation that leads to disturbance in routine activities warrants a visit to the health provider.

5th P: Period in between periods

The fifth P is a simple integration with the remaining Ps of the period puzzle. On the days that a young girl is not having her periods, she should be taught to take age appropriate balanced diet (rich in iron), have an active lifestyle filled with an exercise routine and a good social life. In the lives of far too many young girls, periods bring a moment where they are pushed indoors, playing with friends is halted and cultural grooming for marriage begins. It is pertinent to talk about taking care of herself in the period in between her *periods* to have a healthy menstrual cycle. This provides the health care provider an opportunity to talk about diet and lifestyle at the same time when periods are being discussed and hence showcase periods as being a part of health and life in general. While knowledge is a powerful tool to fight the period myths, we must also work towards changing the attitude and perception towards periods. Education about menstrual health and hygiene is incomplete without concluding with a remark on how periods are a mark of pride for every young woman.

Defining The "Normal" Cycle for a Young Girl

The lack of discussion about periods doesn't just lead to a stigma around the subject, it also causes young girls to seek answers from unqualified sources. The easiest and safest way for a girl to find answers is to ask her friend about her periods and compare it to her situation. Since no two girls are expected to have the same experience with periods, and also because each woman experiences changes in menstrual cycle throughout her life cycle, the comparative information gathered from peers predictably leads to a lifetime of doubts about one's own cycles. All girls should be made aware about what is the expected *range of normal* regarding the duration, length and flow during menstruation at an early age. They should also be taught not to compare themselves with others and to expect variation in cycle length, regularity and flow over the coming years. As part of the same education, girls should be made aware that any significant variation from the described range of normal may be reported to the doctor, thus laying down a foundation for good health seeking behavior in future.

Conclusion

While much progress has been made in the policy and program for adolescent girl education in MHM, our country is yet to venture into creating a policy for menstruation in transgender men and other non-binary menstruators. There is a wave of change in the way coming generations of adolescents, urban as well as rural, male as well as female, perceive periods. Supported by a strong willed government, that already encourages educating both men and women about periods, menstrual health education in the country is bound to gather momentum in the years to come.

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Take up one Idea

Make that one idea your life - think of it, dream of it, live on that idea.
Let the brain, muscles, nerves, every part of your body, be full of that idea.
And just leave every other idea alone. This is the way to success.
That is the way great spiritual giants are produced.

- Swami Vivekananda

Body Image Issues and Adolescent Counselling

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Introduction

Adolescence is a period of immense growth and development during which many physical, psychological, social, and emotional changes occur in an adolescent. One crucial aspect of this developmental period is body image. Body image issue is no longer a western concept as studies have shown that body image dissatisfaction is present in 77.6% of Indian adolescents also.[1] Body image issues affect adolescents across cultures, ethnicity, socioeconomic status and gender.

Definition

Body image can be defined as

- The way you see yourself (Perceptual)
- The way you feel about the way you look (Affective)
- The thoughts & beliefs you feel about your body (Cognitive)
- The things you do in relation to the way you look (Behavioural)

Body image is not based on facts, but is often psychological in nature. Because of their developmental stage and susceptibility to external influence, adolescents are at high risk for a negative body image which can contribute to a multitude of significant health consequences.

Factors Influencing Body Image

Factors that influence body image include:

Peer- Appearance based teasing and criticism, making appearance comparisons, judging the appearance of friends are few ways in which peers influence adolescent body image.

Media- Television, magazines, internet, social media like instagram, facebook have an influence on the young minds.

Parents- Parents who are overly concerned about their own weight or their teen's weight or appearance have a negative effect on the child. Constant nagging by parents also contributes to it.

Parents have an important role to play in promoting a positive body image and a healthy relationship. By talking about body image with the adolescents, parents can help them to become comfortable in their own skin. The following points should be discussed:

- Explain the effects of puberty to the teenager and make them understand that weight gain is a normal part of development.
- Talk about media messages. Note what your teen is reading or watching and discuss it with them. Encourage them to question what they see or hear. Monitor their internet use.
- Discuss self-image. Offer reassurance that healthy body shapes vary. Help them to accept and respect their body.
- Use positive language. Encourage a healthy diet and physical activity in them.

Effects of Negative Body Image

Distortion and dissatisfaction with one's body can generate negative feelings and devaluation. This, at times, can result in change in eating behaviour leading to becoming overweight or the development of eating disorders in the adolescent. Other dangers of a negative body image include depression, anxiety, low self esteem, excessive exercise, drug use and mood changes.

Eating Disorders

Eating disorders (ED) are pathological conditions of multidimensional aetiology which determine a distorted relationship between the individual, their eating behaviour, and body shape. Poor self esteem and body dissatisfaction are considered as predictors of Eating Disorders. Approximately 95% of persons with an eating disorder are 12 to 25 years of age. Although 90% of patients with an eating disorder are females[2], the incidence of ED in males is also increasing. The Diagnostic and Statistical Manual of Mental Disorders[3] has grouped eating disorders into the following main categories:

- Anorexia nervosa (AN)
- Bulimia nervosa (BN)
- Binge eating disorder (BED)
- Avoidant restrictive food intake disorder (ARFID)

Anorexia Nervosa (AN)

The diagnostic criteria for Anorexia Nervosa include:

- Restriction of energy intake leading to low body weight
- Fear of gaining weight or behaviour that interferes with weight gain
- Disturbance in the way in which one's body weight or shape is experienced.

In adolescents, the severity of anorexia nervosa is based on age & gender norms according to their BMI percentiles. A BMI below the 10th percentile is considered to be consistent with the degree of malnutrition associated with AN. In anorexia nervosa longitudinal growth charts show deviations from the normal growth trajectories.

Bulimia Nervosa (BN)

Bulimia nervosa is defined as uncontrolled eating of an abnormally large amount of food in a short period, followed by compensatory behaviours, such as self-induced vomiting, laxative abuse, or excessive exercise. Binges can alternate with severe dieting, resulting in significant weight fluctuations. Frequent vomiting can lead to dehydration, depletion of important minerals and can cause physical problems including damage to vital organs.

Diagnosing Eating Disorders

All children and adolescent patients should always be screened for eating disorders. Screening tools such as the SCOFF questionnaire can be used. The common signs and symptoms seen are amenorrhea, headaches, irritability, constipation, syncope, dizziness, loss of muscle mass, dry skin and hair loss. Hypotension, bradycardia, hypothermia, and orthostatic changes in blood pressure are also seen. Other notable findings include hypercarotenemia, acrocyanosis, lanugo, dependent edema, breast atrophy, scaphoid abdomen, and parotid swelling. Endocrine symptoms in anorexia nervosa include hypothermia, delay in growth or growth impairment, pubertal delay or interruption, delayed onset of menses or secondary amenorrhea and osteopenia progressing to osteoporosis. Eating disorders can affect vital organs and can cause cardiac arrhythmias, congestive heart failure, kidney failure and pancreatitis. In addition, Anorexia nervosa is associated with an increased risk of suicide and other psychiatric disorders like obsessive-compulsive disorders.

Evaluation of Eating Disorders

The first step in initial evaluation of patients with eating disorders is to identify presence of any emergency medical condition that requires hospitalization. Weight, height, body mass index, body temperature, pulse and blood pressure should be recorded. A complete blood count, serum electrolytes, serum glucose, renal and liver function tests and urinalysis with specific gravity should be done. A thyroid-stimulating hormone test should be done to rule out underlying thyroid disorder. Additional blood tests like serum calcium/ magnesium/ phosphate, total protein, serum albumin, erythrocyte sedimentation rate and serum amylase (elevated if the patient is vomiting) should be done. Electrocardiogram is done to evaluate bradycardia and risk of cardiac arrhythmias. Dual-energy xray absorptiometry (DEXA) may be required to evaluate bone density. Luteinizing hormone, follicle-stimulating hormone and estradiol levels may be required in few cases. In addition, patients with eating disorders should also be assessed for psychiatric comorbidities including depression, suicidal tendencies, anxiety disorders and substance abuse.

Treatment of Eating Disorders

Treatment of adolescents with eating disorders should be provided by health care providers who are experts in this field and have knowledge about the normal adolescent physical and psychological development. Hospitalization may be required in case of severe malnutrition, medical or psychiatric emergencies or failure of out-patient treatment.

A multidisciplinary team is needed which should include a family physician, a psychotherapist or psychiatrist, a dietician, an eating disorder specialist, and school personnel. The focus of initial treatment for patients who have anorexia nervosa with cachexia is restoring nutritional health and weight gain. The target of weight restoration in patients with anorexia nervosa is 90% of the average weight expected for the patient's age, height and sex.

Psychotherapy is the mainstay of treatment. Family-based treatment (the Maudsley method) is effective for treating anorexia nervosa in adolescents. Cognitive behaviour therapy and interpersonal psychotherapy have shown to make significant improvement in adolescents with bulimia nervosa. Meditation and yoga have also been found of benefit to patients with anxiety and may provide low-energy physical activity. Antidepressants, including selective serotonin reuptake inhibitors (SSRIs), can help to prevent symptoms of depression and suicidal tendencies in patients with anorexia nervosa. Even in patients with bulimia nervosa, studies have suggested that SSRIs may be beneficial in decreasing the frequency of

binge eating and purging.[2] Antipsychotic medications such as Olanzapine are generally not effective in the treatment of eating disorders.

Prognosis

Although approximately one-half of patients with anorexia nervosa fully recover, about 30% achieve only partial recovery, and 20% remain chronically ill. Anorexia Nervosa has the highest mortality of all mental health disorders, typically resulting from complications of starvation or suicide. Bulimia nervosa has a more favourable prognosis, with up to 80% of patients achieving remission with treatment. It has a relapse rate of 20% and is associated with mortality at times.

Adolescent Obesity

There has been steep rise in the prevalence of obesity in adolescents. Genetic predisposition, race, socioeconomic status, environment, accessibility to healthy and affordable foods, sleep habits, and geographic region are few factors that influence it. The standard BMI weight-status categories cannot be used in adolescents as they are not age and sex specific and do not directly measure adiposity. To account for normal sex-specific changes in weight, height, and adiposity that is seen in adolescents, BMI is interpreted after it is plotted on growth charts for age & sex in percentile (https://nccd.cdc.gov/dnpabmi/calculator.aspx). Overweight is defined as BMI at or above the 85th percentile, obesity is BMI at or above the 95th percentile, and severe obesity is BMI greater than or equal to the 99th percentile for age. Extreme obesity has been used to describe adolescents who are at or above 120% of the sex-specific 95th percentile for age.[4]

Dangers of Obesity

Adolescents affected by obesity are at an increased risk of developing comorbidities. Metabolic syndrome resulting from the coexistence of risk factors for type 2 diabetes and cardiovascular disease, namely, abdominal obesity, hyperglycemia, dyslipidemia, and hypertension is seen in approximately 9% of adolescents. Fatty liver, obstructive sleep apnea and orthopaedic conditions are also reported. Gynaecologic health risks like abnormal uterine bleeding (AUB), Polycystic ovarian syndrome (PCOS) and obstetric health risks in obese adolescents who become pregnant are also seen. Adolescents who are overweight or obese are at higher risk of low self-esteem, distorted body image, depression, anxiety, discrimination, and strained peer relationships.

Management

A thorough clinical history and physical examination of the adolescent is essential to assess obesity associated complications and whether the patient has any modifiable lifestyle practices. Measurement of blood pressure, fasting lipid profile & HbA1c is done if BMI is high to identify comorbidities.

Lifestyle Interventions

The American Academy of Paediatrics recommends a weight loss goal of no more than 2 pounds per week, depending on BMI percentile.[4] Interventions include encouraging healthy eating and physical activity and behavioural counselling by health care providers trained in weight management. Behavioural weight-loss treatment with family involvement in adolescents gives good results. Various dietary manipulations can achieve caloric restriction and result in weight loss in adolescents. Commonly used are alteration of macronutrient distributions (low fat, low carbohydrate, high protein), intermittent fasting and more intensive dietary therapies like a very-low-energy diet. Adolescent obesity is associated with suboptimal physical activity levels, poor fitness and excessive sedentary behaviour. It is recommended that all adolescents partake in at least 60minutes of daily moderate-to-vigorous physical activity and that no more than 2hours per day is spent using electronic media for entertainment.

Drugs

Though there are no evidence-based guidelines for use of pharmacological agents in management of obesity in adolescents, the following drugs may be used.

Tetrahydrolipstatin, approved by USFDA is the first-line adjunct drug to behavioural interventions. It inhibits digestive lipases and blocks approximately 25–30% of dietary fat absorption. An adverse effect includes fatty or oily stools, abdominal pain, fecal urgency, & diarrhoea. A 2009 meta-analysis of randomized clinical trials in adolescents has reported a mean BMI reduction of 0.83 with tetrahydrolipstatin.[5]

Metformin is not recommended for weight loss alone. It is to be given in Adolescents having PCOS with insulin resistance. Metformin results in modest weight reductions when used with a behavioural weight reduction program. Adverse effects includes abdominal pain, diarrhoea, vomiting. A study has shown that metformin reduces the mean BMI by 1.21–1.42.[6]

Surgery

The American Society for Metabolic and Bariatric Surgery has recommended surgery in obese adolescents who meet the following criteria: BMI > 35 kg/m^2 and a severe comorbidity or BMI > 40 kg/m^2 with minor comorbidities, Tanner stage IV or attainment of 95% of predicted adult stature based on bone age and a history of sustained efforts to lose weight through changes in diet and physical activity. Long-term outcome data after gastric bypass surgery in adolescents are lacking. Depressive symptoms and quality of life have been shown to improve in adolescents after surgery.[7] Surgically induced weight loss can lead to resumption of ovulation in some anovulatory women. Although women with a history of gastric bypass can have healthy pregnancies, pregnancy should be avoided for at least 12–18 months after gastric bypass because of rapid weight loss and micronutrient deficiencies.

Adolescent Counselling

Counselling is an important aspect in the holistic management of body image and other issues faced by the adolescent. Clinicians should be welcoming, friendly and aware of the behavioural and environmental factors that influence adolescents. Counselling requires good communication skills especially with adolescents who are likely to be intimidated, defensive and even resistant during the session. In addition he/she should be a good listener, be understanding, non-judgmental and should maintain confidentiality and privacy.

Approach during counselling should be to establish rapport, create an appropriate atmosphere and obtain complete information.

Initial assessment should begin by examining the home and the educational/ employment setting. Then the eating habits and activities of the client should be noted. Later, more sensitive issues such as drugs, sexuality, safety and suicide/depression should be addressed. (HEADS - • Home • Education/Employment /Eating • Activity • Drugs • Sexuality/Safety/Suicide).

Counselling should be age appropriate. Those in early adolescence may have issues regarding body image, growth and development while those in late adolescence may have issues regarding intimacy.

Components of adolescent counselling include:

- Prevention of anemia and other nutritional deficiency.
- Adolescent Growth, Development and nutrition monitoring
- Personal Hygiene and Menstrual Hygiene
- Sexual issues
- Unwanted adolescent pregnancy and unsafe abortion
- HIV/AIDS
- Body Image Issues
- Immunization
- Issues like literacy; pre-marital counselling and gender bias depending on the social and cultural background of the client

A clinician should take into account the patient's social, cultural and medical background and provide them with information, counsel them and provide them clinical services. He/she should diagnose/detect and manage health problems and behaviours that put these adolescents at risk of negative health outcomes. When necessary they should be referred to other health and social service providers.

The parent or the guardian accompanying the adolescent should also be counselled either in the beginning or preferably at the end of the session taking the adolescent into confidence. All issues should be discussed with them and they should be guided accordingly.

Conclusion

Body image is an important part of adolescent development and has an impact on overall health. Poor body image can contribute to significant health consequences, both physical as well as psychological. Parents and clinicians should be aware of this and must engage with the adolescent. They have an important role to play in promoting positive body image in adolescents and instilling confidence and self esteem in them.

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PCOS and Hirsutism in Adolescence

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Polycystic Ovary Syndrome (PCOS) is a heterogenous syndrome of unknown etiology and is the commonest multisystem endocrine abnormality. The number of women affected varies widely: 2 to 26 in every 100 women and 11 in every 100 adolescents are affected by this condition.[1]

The symptoms of PCOS include irregular periods/ amenorrhoea, an increase in facial or body hair (hirsutism), loss of hair on the head (alopecia), weight gain, oily skin, acne and reduced potential for fertility. Currently, there is no specific cure for PCOS and it does not go away on its own. Usually hirsutism complicates PCOS in adolescent girls but may occur independently also.

PCOS is divided into 4 major groups based on external appearances (Rotterdam criteria)[2]

- Frank or classic polycystic ovary PCOS (anovulation, Increased androgen levels, and polycystic ovaries)
- Classic non-polycystic ovary PCOS (anovulation, Increased androgen levels, and normal ovaries)
- Non-classic ovulatory PCOS (regular menstrual cycles, Increased androgen levels, and polycystic ovaries)
- Non-classic mild PCOS (anovulation, normal androgens, and polycystic ovaries)

Diagnostic Assessment of PCOS:

The following specific criteria should be used for a diagnosis:

1. **Irregular menstrual cycles:** defined as
   - 1 to < 3 years post menarche: if cycle length < 21 or > 45 days
   - > 3 years post menarche to perimenopause: < 21 or > 35 days or < 8 cycles per year
   - > 1 year post menarche: Any one cycle of more than 90 days
   - Primary amenorrhea by age of 15 or > 3 years post thelarche.
   - Irregular menstrual periods in the first-year post menarche is a part of normal pubertal transition
2. **Biochemical hyperandrogenism**
   - Calculated free Testosterone, free Androgen Index (FAI) or bioavailable Testosterone should be used for assessment
   - Direct free Testosterone assays **should not** be used in the assessment of biochemical hyperandrogenism, as they have poor sensitivity, accuracy and precision.
   - Androstenedione and Dehydroepiandrosterone sulfate (DHEAS) should be considered if total or free testosterone are not elevated.
   - If androgen levels are markedly above reference ranges, other causes of biochemical hyperandrogenism should be ruled out.
3. **Clinical hyperandrogenism**
   - History and physical examination for signs and symptoms of clinical hyperandrogenism, including acne, hirsutism and alopecia.
   - Hirsutism and alopecia are important, regardless of apparent clinical severity due to the potential negative psychosocial impact.
   - Standardized visual scales such as the modified Ferriman Gallwey score (mFG) should be used for assessing hirsutism.
   - The degree and distribution of alopecia should be assessed by Ludwig visual score.
4. **Ultrasound and polycystic ovarian morphology (PCOM)**
   - Due to the high incidence of multi-follicular ovaries at a gynecological age of < 8 years (< 8 years after menarche), USG **should not** be used for the diagnosis of PCOS in this age group.
   - If sexually active, transvaginal ultrasonography (TVS) is preferred for the diagnosis of PCOS.
   - The threshold for PCOM should be (in either ovary): number of follicles per ovary > 20 and/or an ovarian volume ≥ 10ml, ensuring no corpora lutea, cysts or dominant follicles are present while using a TVS transducer with a frequency bandwidth that includes 8MHz.
   - If using older technology TVS (probe < 8 MHz), the threshold for PCOM is ovarian volume ≥ 10ml in either ovary.
   - Reporting is based on ovarian volume with a threshold of ≥ 10ml in transabdominal USG.

- An ovarian ultrasound is **not necessary** for PCOS diagnosis in patients with irregular menstrual cycles and hyperandrogenism; however, ultrasound will identify the complete PCOS phenotype

Adolescents who have features of PCOS but do not meet diagnostic criteria are 'at risk' and a repeat assessment should be done at or before full reproductive maturity (8 years post menarche).

Table 1: Screening and diagnostic assessment approach for PCOS in Adolescent

Step 1: Irregular cycles + clinical hyperandrogenism (exclude other causes) *
Step 2: If no clinical hyperandrogenism Test for biochemical hyperandrogenism (exclude other causes)*
Step 3: If ONLY irregular cycles OR hyperandrogenism Adolescents: USG not indicated, consider at risk of PCOS, reassess later Adults: USG for PCOM, if positive (exclude other causes) *

* Exclusion requires investigations such as TSH, Prolactin levels, FSH and diseases like CAH, Cushing's, adrenal tumors etc. to be ruled out.

Management

Definitive diagnosis of PCOS is not necessary before instituting active treatment as early treatment can decrease future comorbidities. The following interventions are used in the treatment of PCOS:

1. Lifestyle Modifications

Lifestyle interventions including diet, regular exercise and behavioral strategies should be recommended in all PCOS patients with excess weight, for reductions in weight, central obesity and insulin resistance. Achieving a weight loss of 5% to 10% over a period of six months in these patients yields significant clinical improvement and is considered successful weight reduction.

Healthy lifestyle behaviors should also be recommended to achieve and maintain healthy weight and optimize hormonal outcomes, general health, and QOL.

Diet

- To achieve weight loss in those with obesity, an

Table 2: Pharmacological approach - treatment for non-fertility indications.[3]

COCP (Combined oral contraceptive pills): First line		
A. Use lowest effective estrogen dose (20-30 µgs ethinyl estradiol or equivalent). B. Consider natural estrogen preparations balancing efficacy, metabolic risk profile, side effects. C. Follow WHO COCP guidelines for relative and absolute contraindications and risk. D. 35µgs ethinyl estradiol plus cyproterone acetate: **Not first line** in PCOS due to increased adverse effects including venous thromboembolic risks. E. Hirsutism requires COCP and additional cosmetic therapy for at least 6 months F. Consider additional PCOS related risk factors such as high BMI, deranged lipid profile and hypertension		
Second line pharmacological therapies*		
COCP + lifestyle + metformin	**COCP + anti-androgens**	**Metformin + lifestyle**
• No COCP preparation is superior in PCOS. • Should be given in women with PCOS for management of metabolic features, where COCP + lifestyle does not achieve goals. • Can be given in adolescents with PCOS and BMI ≥ 25kg/m^2 where COCP and lifestyle changes do not achieve desired goals. • Most beneficial in high metabolic risk groups including those with diabetes risk factors, IGT or high-risk ethnic groups.	• Evidence in PCOS is limited. • Anti-androgens (e.g. Drosperinone, Cyproterone acetate) must be used with contraception to prevent male fetal virilization. • Can be given if 6 months COCP + cosmetic treatment fail to reach hirsutism goals. • Can be given in androgenic alopecia.	• Can be considered for weight, hormonal and metabolic outcomes in adults and in adolescents. • Most useful with BMI ≥ 25kg/m^2 and in high-risk groups. • Side effects, including GI effects, are dose-related and self-limiting. • Start low dose, with 500 mg increments every week. • Metformin appears safe long-term. Ongoing monitoring required. Has been associated with low levels of vitamin B12.
A. Anti-obesity medications can be considered along with lifestyle changes as per national guidelines, considering side effects and contraindications. Pregnancy should be avoided when on therapy. B. Inositol should currently be considered experimental in PCOS C. Avoid Progesterone only withdrawal treatment for PCOS		
*Other drugs include Myoinositol and D-Chiro inositol (in a ratio 40:1)[4] Dosage: 2-4 g/ 50-100 mg 1 od for 10 weeks. Myo-inositol (MI) increases insulin sensitivity, decreases hyperandrogenism and improves the menstrual cycle.		

energy deficit of 30% or 500 -750 kcal/day (1,200 to 1,500 kcal/day) should be advised

- A variety of balanced dietary approaches should be recommended to reduce dietary energy intake and induce weight loss in women with PCOS, overweight, and obesity.
- Adopting a flexible and individual approach avoiding unduly restrictive and nutritionally unbalanced diet plays a key role.

Exercise

- For prevention of weight gain and maintenance of health: In adolescents, at least 1 hour of moderate to vigorous physical activity/ day, including muscle and bone strengthening exercises at least 3 times per week.
- For modest weight loss, prevention of weight-regain and greater health benefits: A minimum of 250 minutes per week of moderate- intensity activities or 150 minutes per week of vigorous-intensity or an equivalent combination of both, and muscle-strengthening activities on two non-consecutive days/ week with minimized sedentary, screen or sitting time.

Behavioral Strategies

- Strategies such as goal-setting, self-monitoring, problem-solving, assertion training, slow eating, and reinforcing changes and relapse prevention, to optimize weight goals, healthy lifestyle and emotional balance should be used.

2. Pharmacological Interventions (Table 2)

Long-Term Complications of PCOS

Adolescence is the right time to sensitize susceptible girls to the following complications that may occur due to long standing PCOS

1. **Cardiovascular disease risk (CVD)**
   - Regular monitoring of weight changes including excess weight gain in PCOS should be offered at each visit or at a minimum of 6-12 months.
   - Indicators of obesity such as weight, height and ideally waist circumference should be measured along with BMI.
   - Those with risk factors including metabolic syndrome, obesity, cigarette smoking, dyslipidemia, hypertension, impaired glucose tolerance and lack of physical activity should be considered at increased risk of CVD.
   - PCOS patients with high BMI, regardless of age, should have a fasting lipid profile at diagnosis (cholesterol, low-density lipoprotein, high-density lipoprotein and triglyceride level).
   - Blood pressure should be measured annually or more frequently according to their risk category.
2. **Impaired glucose tolerance (IGT) and type 2 diabetes**
   - Regardless of age, the prevalence of IGT and type 2 diabetes are significantly increased in PCOS(5-fold in Asia and 3-fold in Europe), with risk independent of, yet exacerbated by high BMI
   - Baseline glucose levels should be done in all patients with PCOS. Thereafter, regular assessment should be done at every one to three years.
   - An oral glucose tolerance test (OGTT), fasting plasma glucose or HbA1c should be performed to assess glycemic status. An OGTT is recommended in high-risk women with PCOS (BMI > 25kg/m^2 or > 23kg/m^2 in Asians, history of impaired fasting glucose, IGT, family history of diabetes mellitus type 2, hypertension or high-risk ethnicity).
3. **Obstructive sleep apnea (OSA)**
   - Screening for OSA should be considered to identify and treat symptoms such as snoring, fatigue after night sleep, daytime sleepiness, and fatigue leading to mood disorders.
4. **Quality of life (QOL)**
   - PCOS has an adverse impact on QOL.
   - The PCOS QOL (PCOSQ), or the modified PCOSQ tool may be useful clinically to highlight PCOS features causing the greatest distress and to evaluate treatment outcomes
5. **Depressive and anxiety symptoms, screening and treatment**
   - In PCOS, there is a high prevalence of moderate to severe anxiety and depressive symptoms in adults and a likely increased prevalence in adolescents and should be routinely screened for in all adolescents and women with PCOS at diagnosis.
6. **Eating disorders**

   The SCOFF (Sick, Control, One stone, Fat, Food) screening tool is used for assessment.

Hirsutism

Hirsutism is the presence of excessive androgen-responsive terminal coarse hair in a male pattern

distribution in females. It can be caused by increased androgen production, decreased sex hormone binding globulin levels (SHBG) or increased sensitivity of target organ (hair follicles) to androgens. PCOS is the most common cause of androgen excess in women (70%). Idiopathic hirsutism occurs in women with regular menstrual cycles and normal serum androgen levels and is mostly due to an increased sensitivity to androgens (mediated by increased peripheral 5α-reductase activity).

Other causes of hirsutism with their associated laboratory parameters and testing are underlined in Table 3 and Table 4.[5,6,7]

Treatment

Treatment can be categorized into two groups

a. Non pharmacologic

b. pharmacologic (Table 5)

a. Non Pharmacologic Treatment includes[8]

- **Temporary**, simple and inexpensive strategies like removal of hair by different epilation methods, such as plucking and waxing. Depilation methods include shaving.
- **Permanent** methods like Electrolysis- efficacy of 15 to 50% with permanent hair loss and Lasers Side effects and disadvantages include
  - Physical discomfort, scarring, folliculitis, irritant dermatitis or discoloration are common
  - Difficult to treat large areas
  - Time consuming.
  - Multiple treatment sessions

b. pharmacologic (Table 5)

Table 3: Aetiology of Hirsutism

Cause	Disorder
Ovary	PCOS (70-80%) Ovarian Hyperthecosis Ovarian neoplasm (0.5%): Sertoli/ Leydig cell neoplasm, (Arrhenoblastoma)
Induced (6%)	Hypothyroidism, hyperprolactinemia, anorexia nervosa, luteoma in pregnancy, menopause
Adrenal (2-8%)	CAH (2-8%), Adrenal tumour (<0.5%), Cushing's syndrome
Drug (0.5%)	Anabolic steroids, androgens, danazol, valproate, phenytoin, minoxidil, glucocorticoid, cyclosporine, progestins, testosterone injection
Others	5-15%

Table 4: Causes of Hirsutism, Associated Laboratory Parameters, and Recommended Additional Tests

Diagnosis	Testosterone	17-OHP	LH/FSH	Prolactin	DHEAS	Cortisol	Additional Testing
CAH	No Change to Increased	Increased	No Change/ No Change	No Change	No Change to Increased	No Change to decreased	ACTH stimulation test may be necessary to make diagnosis.
PCOS	No Change to Increased	No Change	LH: No Change to increased FSH: No change to decreased	No Change to increased	No Change to increased	No Change	Primarily a clinical diagnosis Consider laboratory testing and USG of ovaries to rule out other disorders/ neoplasms. Consider screening for lipids and glucose levels.
Ovarian Neoplasm	Increased	No Change	No Change/ No Change	No Change	No Change	No Change	USG or CT to image neoplasms
Adrenal Neoplasm	Increased	No Change	No Change/ No Change	No Change	Increased	No Change to Increased	USG or CT to image neoplasms
Pharmacologic agents	No Change	No Change	No Change/ No Change	No Change	No Change	No Change	Withdrawal of offending agent recommended
Idiopathic	No Change	No Change	No Change/ No Change	No Change	No Change	No Change	

17-OHP = 17-hydroxyprogesterone; LH = luteinizing hormone; FSH = follicle-stimulating hormone; DHEAS = dehydroepiandrosterone sulfate; ACTH = adrenocorticotropic hormone; CT = Computed tomography scan.

Table 5: Pharmacologic treatment for hirsutism[9,10]

Drugs	Dosage	Side effects	Comments	Risk
COCP EE 35ug + CPA 2mg- Diane, Krimson; EE30ug + Drosperinone 3mg- Yasmin, Dronis 30	1 tablet OD	Nausea and Headache	First-line therapy; can be combined with Antiandrogens	low risk in accidental use during pregnancy; may decrease lactation
Eflornithine	Apply topically BD	Local irritation, Acne and skin rash	High cost	Not known
Finasteride	2.5 mg OD	Decreased sexual desire	Additive benefit when used with spironolactone	High risk of feminization of the male fetus
Glucocorticoids	Prednisolone:5 mg BD	Adrenal suppression, bone density loss, weight gain	Use in patients with CAH	Increased risk of growth retardation and cleft palate, especially if used in Ist trimester
Leuprolide	3.75 mg i.m. monthly	Hot flashes, loss of bone density, vaginal dryness	Consider using in conjunction with COCP	Adverse effects on fetal growth
Spironolactone	100 to 200 mg OD	Breast tenderness, hyperkalemia, irregular menstrual cycles	Breast adenomas in murine testing	Male fetus feminization Increased risk of spontaneous abortion

Conclusion

During adolescence there is an overlap between the symptoms of PCOS and those of normal puberty making the diagnosis of PCOS in the adolescent difficult. Investigations for anovulation and hirsuitism should be directed towards the predominant symptom to exclude any underlying organic cause. Treatment of acne and hirsutism is provided during the ongoing longitudinal evaluation and management for possible PCOS. Long term lifestyle changes and non-pharmacological interventions support pharmacological therapy in adolescent patients with PCOS and Hirsuitism.

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Mirza F, et al. Dydrogesterone use in early pregnancy. Gynecol Endocrinol. 2016;32(2):97-106. † Schindler AE. Progestational effects of dydrogesterone in vitro, in vivo and on human endometrium. Maturitas. 2009;65(1):S3–S11.
^ Novel-Estradiol hemihydrate first time in India. +Safer-As compared to conjugated equine estrogens. Smith NL et al Lower risk of cardiovascular events in postmenopausal women taking oral estradiol compared with oral conjugated equine estrogens. JAMA Intern MED. 2014; 174(1):25-31. * As Prescribing Information of Solfe, version 1; Dated: 25th July 2013

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Announcement

Nominations for NARCHI, Delhi tenure 2022-2024

- Nominations are invited for the following posts:
  - o President NARCHI Delhi 2022-2024
  - o Vice-President NARCHI Delhi 2022-2024
- Eligible candidates should be NARCHI, Delhi member from teaching and non-teaching institutes
- The nominations should be proposed by a NARCHI, Delhi member and seconded by another NARCHI, Delhi member
- Last date for submission of Nominations is 15th September, 2021
- Last date for withdrawal of Nominations is 30th September, 2021
- Nominations, signed by the candidate, proposer and seconder should be sent on the email: narchidelhimamc@gmail.com and please cite the subject as 'Nominations for NARCHI, Delhi tenure 2022-2024'
- Selection of next Office bearers will be decided by the Executive Committee and their decision will be final.

Always stay true to yourself and never let what somebody else says distract you from your goals.

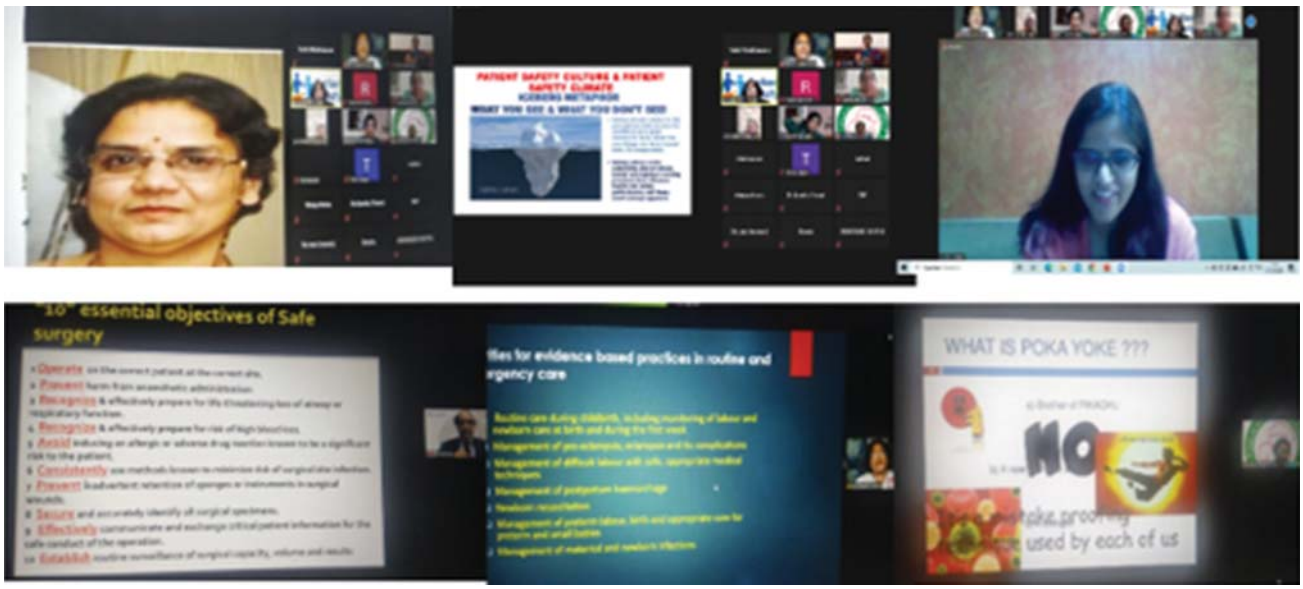
- Michelle Obama

NARCHI Activities in the Month of March, April and May 2021

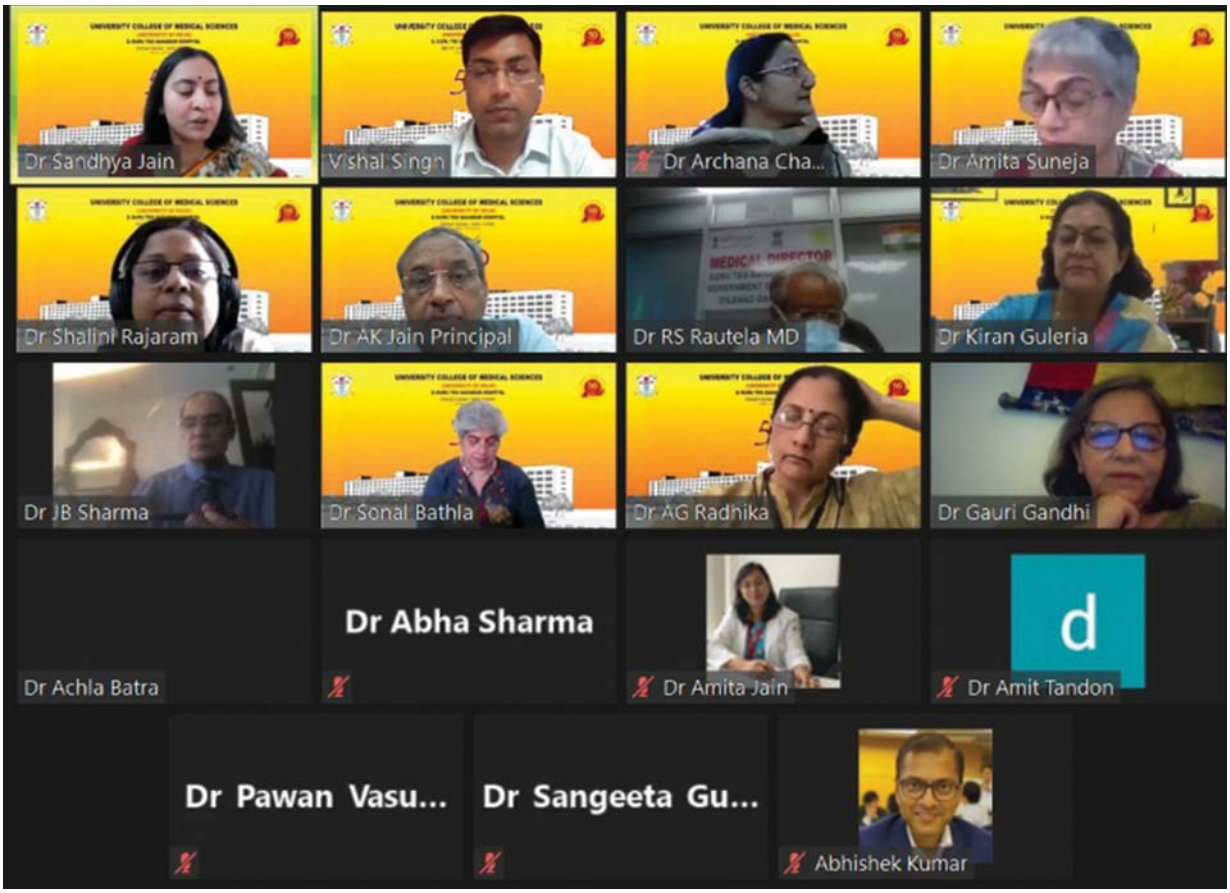
Date	Type of session	Topic	Organized By	
13/3/21	e-CME	Patient safety	• DGF –SW • NARCHI • American College of Surgeons -Indian chapter	The occasion was graced by Dr Asmita M Rathore-President NARCHI- Delhi and Dr Chintamani-President ACS-India Chapter. The webinar was attended by 68 delegates. Patients safety -Global & Indian Prospective. Prevention of hospital acquired infections. Promoting Perioperative Safety. Antibiotic policy in O & G Enhancing Standards for Safe Delivery
20/3/21	Webinar	Urogynecology-Basic and Beyond	• UCMS- GTB Hospitals • NARCHI • Society of vaginal surgeons, felhi	Around 20 eminent national faculty and 176 delegates joined the event There was lecture, video session and a panel discussion on urinary incontinence
22/3/21	Webinar	Thalasemia screening	• NARCHI Delhi and paediatric department of LNH • Sate blood cell • National Health Mission • National service scheme unit of Acharya Narendra dev college	Thalassemia awareness webinar which included overview of thalassemia and necessity of its screening and doubts of the audience which included students of age group 18 to 22 of Acharya Narendra Dev College were cleared
23/3/21	Camp	Thalasemia Screening Camp	• NARCHI Delhi and paediatric department of LNH • Sate blood cell • National Health Mission • National service scheme unit of Acharya Narendra dev college	Thalassemia awareness webinar was followed by thalassemia screening camp at Acharya Narendra Dev College. The camp was successfully concluded by screening of 108 students with a prevalence of 3%.
23/3/21	3rd E -Series for postgraduates	Role of Doppler in FGR pregnancy	• Kasturba hospital in association with : • NARCHI, Delhi • Safe Motherhood Committee AOGD, Delhi • Fetal Medicine Sub-Committee AOGD, Delhi	A continued education series which included case discussion on Fetal Growth Restriction was successfully conducted by Kasturba Hospital with support of NARCHI, Delhi with 58 attendees.
24/3/21 3.30 – 5 PM	Webinar	PCOS and Infertility	• DGF –North • NARCHI Delhi	Dysbiosis of gut microbiota -DOGMA- and it's role in PCOS. Attended by 200 delegates
7/4/21 4-5 PM	CME	Update on antenatal Steroids	• Apollo cradle, Indrapuram, Delhi NCR • NARCHI DELHI	Well received and attended by 50 participants.

10.04.2021	4th E -Series for postgraduates	-FGR	• Kasturba hospital in association with : • NARCHI, Delhi • Safe Motherhood Committee AOGD, Delhi • Fetal Medicine Sub-Committee AOGD, Delhi	A continued education series which included case discussion on Fetal Growth Restriction was successfully conducted by Kasturba Hospital with support of NARCHI, Delhi on 10.04.2021, 7.30 to 9.00 pm with 108 attendees.
17/4/21	Webinar	Preconceptional Folate Deficiency and implications in neural tube defects	• FOG sd • NARCHI	Periconceptional Folate Deficiency and implications in neural defects by Dr Punam Tara And Pearl's of wisdom on How to cope up with this covid period and stay motivated..positive...hopeful happy and healthy by Dr Kamal Buckshee.
23/4/21	CME	Current concept of management of anaemia in pregnancy	• Viveo in association with • NARCHI	Webinar on how to optimize care of Pregnant Women in covid times based on the last one year published data, literature, evidences, reviews and 2021 updated recommendations. We also had an eminent speaker to speak on covid in children, their clinical presentations and treatment guidelines. Also, talk on current concepts on management of Anemia in pregnancy.
30/5/21	Webinar	IHCP	• RCOG IRC, NZ • AOGD • NARCHI Delhi	International speaker -Prof Catherine Williamson with original work and publications on IHCP

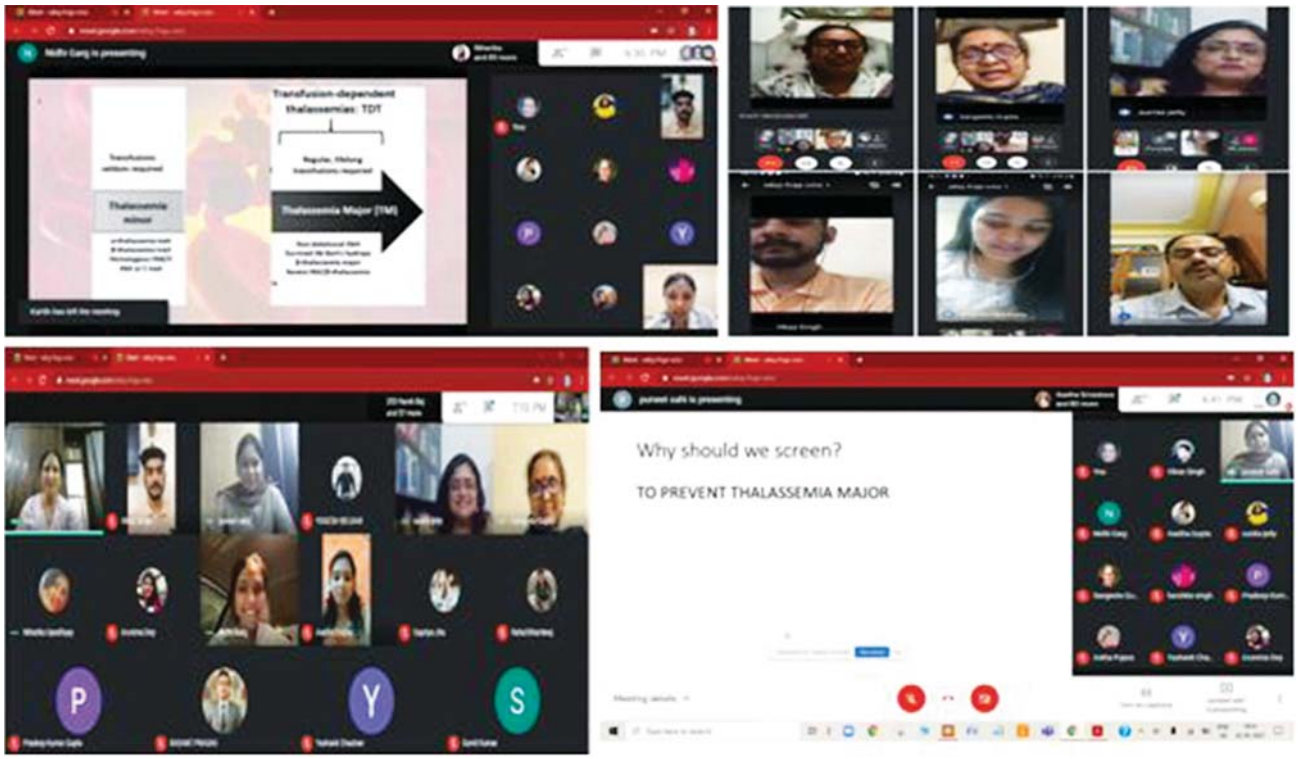
Activities



Webinar on 13th March, 2021 on "Patient Safety"

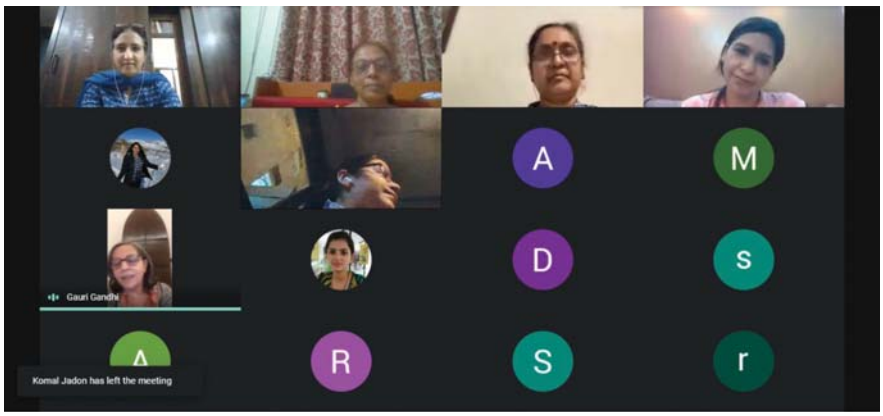


E-CME titled 'Urogynaecology - Basics and Beyond' on 20th March, 2021 (Saturday)



Thalassemia screening webinar on 22nd March, 2021

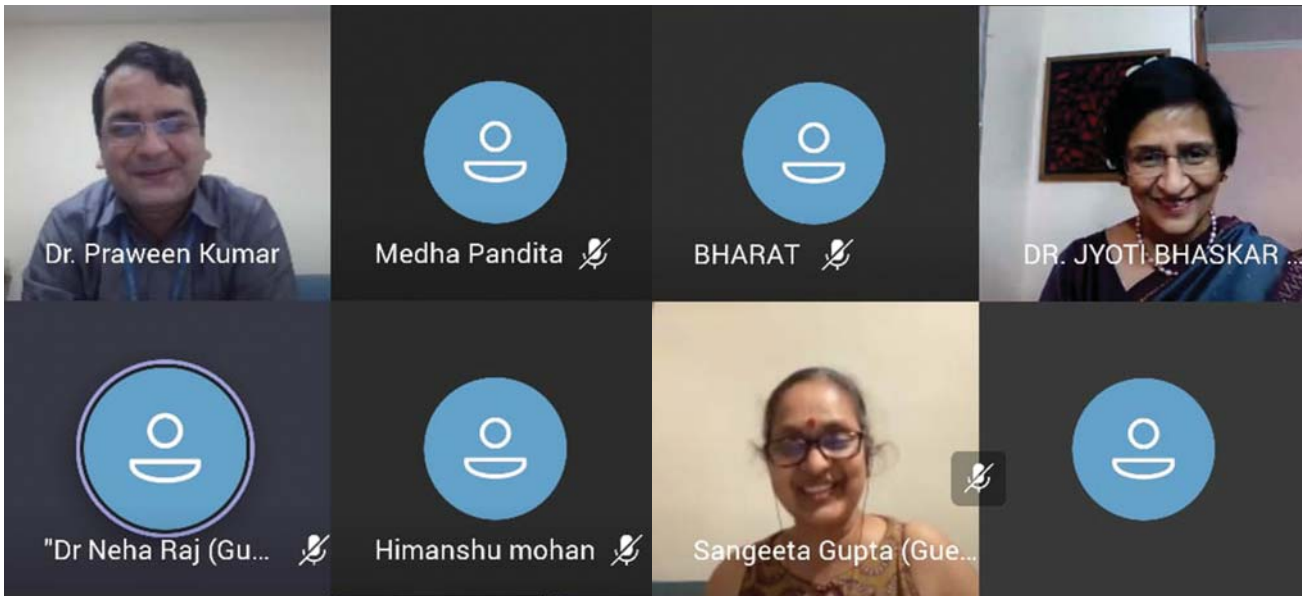
Thalassemia Awareness Webinar was followed by thalassemia Screening Camp on 23rd March, 2021
at Acharya Narendra Dev College, Delhi University



3rd & 4th E-Series for Postgraduates - Role of Doppler & Case Based Discussion on Fetal Growth Restriction
by Kasturba Hospital on 23rd March, 2021 and 10th April, 2021 respectively.

PCOS and Infertility - A Webinar on 24th March, 2021 on Role of Supplementation of Pre and Probiotics in PCOS

Executive Meeting 30th March, 2021



Webinar on 07th April, 2021 on 'Update on Antenatal Steroids'

Webinar on 'Intra Hepatic Cholestasis of Pregnancy' with International Speaker - Prof Catherine Williamson on 30th May, 2021

Women Pathbreakers

Poonam Kashyap
Assistant Professor, Department of Obstetrics and Gynecology, Maulana Azad Medical College and Lok Nayak Hospital, Delhi

Our society has various ill practices and social taboos leading to physical and mental stress for women. These great women have fought relentlessly in eradicating these deep-rooted malpractices, promoting products to make life comfortable for women and thus empowering women.

Maya Vishwakarma – *'pad woman of India'*

Maya Vishwakarma is a true inspiration for many who work hard to break the taboos and myths related to menstruation. She hails from a remote village in Narsingh Pur district of Madhya Pradesh. She went to US for Ph.D and later joined cancer reasearch laboratory in University of California, San Francisco. She established **Sukarma foundation in 2016** to educate and create awareness around menstruation, promote the use of sanitary pads and remove the stigma and myths associated with them. The foundation also manufactures low cost sanitary napkins for tribal women.

Leona W. Chalmers – *'inventor of menstrual cup'*

Leona W. Chalmers was an American actress and singer who later dedicated her life to designing and patenting the first menstrual cup which is a prototype of modern day menstrual cup used to collect menstrual flow. She had a keen interest in inventing ways of promoting female menstrual hygiene leading to the development of the belt free, hidden, rubber menstrual cup in 1937 which revolutionized the world of periods. She also wrote a book 'Intimate side of women's life'. At that time, menstrual cups were made up of latex and did not do well in the market because of availability of other disposable options and also shortage of rubber after Second World war. The cups were relaunched in the beginning of 21st century because of the advantage of being environment friendly and less allergenic due to silicone material. Leona will be remembered for her great contribution to today's available menstrual choices.

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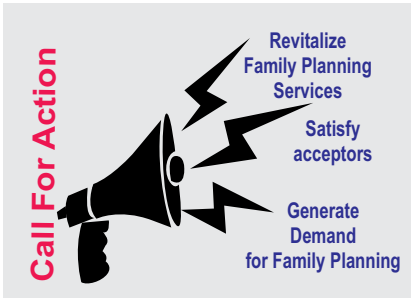

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S. No.	Activity	Proposed date(s)	Remarks
1	Webinar on Contraception	29.06.2021	Topics would be decided in mutual consultation and would include challenges due to current clinical scenario.
2	Spreading awareness on contraception among students (outreach activity in schools)	First week of July	School Session on Family Planning and sex education. Though schools would be completely or partially closed, online platform of teaching in practice by schools would be utilized.
3	Sustaining RH services in COVID		
4	Notification on NARCHI website	Throughout campaign period (27.06.21 to 24.07.21)	As an event icon.
5	Bulk mail to members for sensitization	Pre campaign (3rd week of June)	To be drafted by NARCHI office under DFW approval and banner.
6	Contraceptive update	28th August 2021	This event is planned to give a Post campaign thrust and would include achievements of WPD and challenges found in implementation of FP programs as such.
7	Virtual WPD event	WPD event 10.07.2021	To be considered.
8	Any other	____	To be discussed in detail.

IN THE FUTURE…..

An Introduction to Gender Dysphoria

Deepti Goswami
MD, FRCOG, Director Professor, Department of Obstetrics & Gynaecology, Maulana Azad Medical College, New Delhi

Gender identity is integral to establish a person's place and role in society. It refers to 'How a person feels about oneself'. Male, female, both or neither. Most people live with the gender identity as per the sex determined and assigned to them at birth.

A few terms

Cis gender- When gender identity is in concordance with sex assigned at birth.

Transgender- When gender identity is not in concordance with sex assigned at birth

Transgender men- Those who are assigned the female sex at birth but have a gender identity of a male

Transgender women- Those who are assigned the male sex at birth but have a gender identity of a female

Gender Dysphoria is the condition of psychological distress resulting from marked incongruence between experienced and assigned gender where a person is not comfortable with the sex assigned at birth and has a different gender identity.[1] Gender dysphoria may be temporary in some or may change in the same person.

The term gender dysphoria should not be confused with other terms like ***'sexual orientation'*** and ***'intersex'***.

Sexual orientation refers to sexual attraction felt by a person towards others, irrespective of their own gender identity. The terms Lesbian, Gay, Bisexual or Queer are various terms used to describe a person's sexual orientation.

Intersex is also known as '***Disorder of sexual differentiation',*** refers to discordance between the chromosomal, gonadal (biological) or anatomical (assigned) gender. Some examples are Androgen insensitivty syndrome, Swyer syndrome and Congenital Adrenal Hyperplasia.[2-5]

Prevalence

The prevalence figures for transgenders reported in various studies range from 1:11,900 to 1:45,000 for male-to-female individuals (MtF) and 1:30,400 to 1:200,000 for female-to-male (FtM) individuals. Recent studies report a higher prevalence rate, likely due to more individuals seeking medical care for this reason.[6]

Diagnosis and Management

Most of such individuals seek medical care for gender dysphoria sometime in adolescence or early adulthood. The diagnosis of 'Transgender' is made on the basis of the history taken from the person. Mental health care providers are the first point of contact for making the correct diagnosis and addressing their other mental health issues. Mental health professionals play a seminal role in the care of these individuals even later on.

Many transgenders seek medical care to achieve appropriate changes in physical appearance as per their gender identity. This involves use of hormones and appropriate reconstructive surgeries. Such care is best provided by a multidisciplinary team comprising of endocrinologist, reconstructive surgeons, urologist/ gynecologist. However before any of these medical interventions are initiated, first of all, a medical health consultant should establish that gender dysphoria has been persistent for several years (and is not a transient state of mind) and that the person is competent to take such a decision.[7]

Gender/ Sex reaffirming surgeries are complex and often involve a series of irreversible interventions along with use of appropriate masculinizing or feminizing hormones.[8]

- For transgender men [female-to-male (FtM) individuals]: some or all of the following interventions may be needed. Oophorectomy, hysterectomy, bilateral mastectomy and vaginectomy. Some may also opt for masculinizing genital surgeries including phalloplasty and scrotoplasty.
- For transgender women [male-to-female (MtF) individuals]: Breast augmentation surgery, vaginoplasty to create neovagina.

Rights of Transgenders

Transgender people are often shunned in society and face stigma and discrimination at all fronts. They have problems in accessing education, job opportunities,

quality health care and hence are not able to live a socially satisfying life.

To protect the rights of Transgenders, the Ministry of Law and Justice published "THE TRANSGENDER PERSONS (PROTECTION OF RIGHTS) ACT, 2019" on 5th December, 2019[3] in the Gazette of India.[9] The important issues addressed by this Act are:

1. **Recognition of identity of a transgender person**
   - A transgender person shall have a right to be recognized as such, in accordance with the provisions of this Act.
   - A person recognized as transgender shall have a right to self-perceived gender identity.
   - A transgender person may make an application to the District Magistrate for issuing a certificate of identity as a transgender person, with appropriate documents,
   - The District Magistrate shall issue to the applicant a certificate of identity as transgender person after following legal procedure
   - The gender of transgender person shall be recorded in all official documents in accordance with certificate issued
   - Such a certificate issued to a person shall confer rights and be a proof of recognition of his identity as a transgender person.
2. **Change in gender**
   - After the issue of a certificate, if a transgender person undergoes surgery to change gender either as a male or female, such person may make an application, along with a certificate issued to that effect by the Medical Superintendent or Chief Medical Officer of the medical institution in which that person has undergone surgery to the District Magistrate for revised certificate
   - The District Magistrate shall, on receipt of an application along with the certificate issued by the Medical Superintendent or Chief Medical Officer, and on being satisfied with the correctness of such certificate, issue a certificate indicating change in gender.
   - The person who has been issued a certificate of identity or a revised certificate shall be entitled to change the first name in the birth certificate and all other official documents relating to the identity of such person.
3. **Welfare of Transgenders:**
   - No child shall be separated from parents or immediate family on the ground of being a transgender, except on an order of a competent court, in the interest of such child.
   - The Act further lays down measures to be taken by government for their welfare and protection of rights including education related opportunities and recruitment in jobs.
4. **Medical care of Transgenders**

   The appropriate Government shall take the following measures:
   - To set up separate Human immunodeficiency virus Sero-surveillance Centres to conduct sero-surveillance for such persons in accordance with the guidelines issued by the National AIDS Control Organisation in this behalf;
   - To provide medical care facilities including sex reassignment surgery and hormonal therapy;
   - Counselling facility before and after sex reassignment surgery and hormonal therapy ;
   - Bring out a Health Manual related to sex reassignment surgery in accordance with the 'World Professional Association for Transgender Health' guidelines;
   - Review of medical curriculum and research for doctors to address their specific health issues;
   - To facilitate access to transgender persons in hospitals and other healthcare institutions and centres;
   - Provision for coverage of medical expenses by a comprehensive insurance scheme for Sex Reassignment Surgery, hormonal therapy, laser therapy or any other health issues of transgender persons.

Advocacy for Transgenders

- The ***Delhi commission for Women*** has set up a ***Transgender Cell*** to look into the complaints of discrimination, violence and abuse against transgenders and also to advocate the cause of the community.
- ***The Association of Transgender Health in India*** is actively involved in advocacy for the rights of transgender individuals.[10] This association is working towards mainstreaming the transgender individuals by promoting inclusiveness.
- At international level, ***The World Professional Association for Transgender Health (WPATH)*** identifies itself as "an international, inter-disciplinary non-profit organization devoted to promoting evidence based care, education, research, advocacy, public policy and respect in transgender health."[11]
- The ***Yogyakarta Principles*** (named after a city in Indonesia where these were formulated), adopted in

November 2006 elaborate upon the principles and state obligations on the application of international human rights law in relation to sexual orientation, gender identity, gender expression and sex characteristics.[12]

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World Population Day

World Population Day is observed every year on July 11th with the goal of highlighting difficulties created by overpopulation and raising awareness about how population explosion may harm the ecosystem and progress of humanity. It was established by the United Nations in 1989 to commemorate the day when the world population reached the Five Billion figure on 11th July 1987. The day was first celebrated as World Population Day on July 11, 1990 to enhance awareness about population issues, including family planning, gender inequality, maternal health and their relations to the environment.The theme of World Population Day 2021 was 'the impact of the Covid-19 pandemic on fertility'. It was observed to shed more light on the impact of the Covid-19 pandemic on sexual and reproductive health and reproductive behaviour globally. It was organised by the Population Division of the United Nations Department of Economic and Social Affairs (DESA).

Common Menstrual Problems in Adolescents

Nidhi Garg[1], Deepti Goswami[2]
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The two most common menstrual problems seen in adolescent girls are Abnormal uterine bleeding and Amenorrhoea.

Abnormal Uterine Bleeding in Adolescents

Various menstrual parameters and their "normal" limits have been described by The Federation of Obstetric and Gynaecologic Society of India (FOGSI) as Good Clinical Practice (GCP) guidelines on abnormal uterine bleeding (AUB). (Table 1)[1]

Table 1: Normal menstrual cycle in adolescent girls[1]

Regularity of cycle, cycle to cycle variation over 12 months	Regular, variation ± 2- 20 days
Frequency of menses	24- 38 days
Duration of flow	4.5 – 8 days
Volume of monthly blood loss	20 – 80 mL

Any aberration of menstrual volume, regularity, duration and/or frequency in an adolescent who is not pregnant has been defined as AUB by The International Federation of Gynaecology and Obstetrics (FIGO). The FIGO also recommends the use of specific menstrual terminology as mentioned in Table 2.

Causes of AUB

FIGO describes the causes of AUB using the PALM-COEIN classification system.[4]

[Polyp, Adenomyosis, Leiomyoma, Malignancy, Hyperplasia (structural causes); Coagulopathy, Ovulatory dysfunction, Endometrial, Iatrogenic and Not yet classified (non-structural causes)]

The most common clinical presentation of AUB in Adolescents is heavy menstrual bleeding (HMB) the most common cause of which is anovulatory cycles either due to an immature hypothalamic-pitutary- ovarian axis (HPO) or polycystic ovarian syndrome (PCOS). Delayed or absent ovulation, either physiological or due to PCOS, leads to decreased progesterone and excessive estradiol (E2) production from ovarian follicles, causing the endometrium to proliferate and become more prone to unpredictable menstrual bleeding in both timing and amount. Coagulopathy as a cause of AUB is reported in 5% to 28% of studies; very rarely AUB could be due to structural problems (1.3% - 1.7%).

Table 2: Abnormal uterine bleeding- FIGO recommendations for menstrual terminology[2,3]

Categories	**Definitions**
Disorders in regularity	
Irregular menstrual bleeding	Variation >20 days over a period of one year
Amenorrhea	No bleeding in a 90-day period
Disorders in frequency	
Infrequent menstrual bleeding (oligomenorrhea)	1 or 2 episodes over 90 days
Frequent menstrual bleeding	>4 episodes in a 90- day period
Disorders in amount of flow	
Heavy menstrual bleeding	Excessive blood loss interfering with the woman's physical, emotional, and social quality of life either alone or with other symptoms
Heavy and prolonged menstrual bleeding	Excessive blood loss exceeding eight days
Light menstrual bleeding	Bleeding less than 5 mL in a period
Disorders of duration of flow	
Prolonged menstrual bleeding	Menstrual periods that exceed eight days on a regular basis
Shortened menstrual bleeding	Menstrual bleeding lasting less than two days

Table 3: Causes of abnormal uterine bleeding in adolescents.[3]

Anovulation	Physiologic	
	Androgen excess	Polycystic ovarian disease, hyperandrogenic state, congenital adrenal hyperplasia, Cushing's syndrome, ovarian/adrenal tumours
	Systemic diseases	Hyperprolactinemia, Hypothyroidism, renal disease, liver disease, diabetes mellitus, chronic illness
	Eating disorders	Anorexia nervosa, bulemia
	Primary ovarian	Ovarian insufficiency, premature ovarian failure, ovarian tumours
	Drugs	Glucocorticoids, reserpine, anti -psychotic drugs
	Others	Stress, excessive physical exercise
Bleeding disorders		Hereditary bleeding disorders, coagulopathy, von Willibrand's disease, disorders of platelet function, disorders of fibrinolysis, acquired bleeding abnormalities, ITTP, leukaemia, aplastic anaemia, anticoagulation therapy
Pregnancy related complications		
Iatrogenic		Hormonal contraceptives, exogenous oestrogens

Adolescents with androgen excess, hyperprolactinemia, having anorexia or doing excessive exercise mostly present with amenorrhea and scanty menses. Physiological causes and bleeding disorders present with heavy menstrual bleeding.

Assessment of an adolescent with AUB

A careful menstrual as well as medical history and physical examination usually provide most of the information needed to distinguish functional causes (such as anovulation) from structural causes (such as endometrial polyps, fibroids) of abnormal bleeding[5].

History

- Menstrual history should include age of menarche, last menstrual period, cycle frequency, duration, associated pain, flow, flooding, large clots (>2cm in diameter) and frequency of pad/tampon changes. Sexual history including contraceptive use is also important. Severity of abnormal uterine bleeding should be ruled out by assessment of symptoms of anaemia such as dizziness and shortness of breath.
- Additional signs like epistaxis, bleeding gums, easy bruising are suggestive of bleeding disorders.
- Past medical history should include history of coagulopathy, platelet function disorders, recurrent haemorrhagic cysts, chronic medical conditions.
- Adolescent assessment using HEADDS screen (Home, education, employment, eating and exercise, activities and peer relationships, social media, drug use including prescribed medications, cigarettes, vaping, alcohol and other drugs, sexuality and gender, suicide, self-harm, safety and spirituality) should also be done.

Examination Look Outs

- Vital signs: hypotension, tachycardia
- Skin: pallor, petechiae, bruising
- Abdominal examination: tenderness or abdomino-pelvic mass
- Signs of hirsutism: acne, excess facial or body hair
- Though rarely indicated in adolescents, vaginal examination, if needed, should only be performed once, in consultation with a senior consultant with relevant consent.
- P/R can contribute to diagnosis

Investigations

- Full blood count
- Blood group and antibody screen in case transfusion is required.
- Serum Ferritin
- Coagulation screen
- TSH – needs to be done if symptoms of thyroid disorder are present.
- Urine or blood ß hCG (with consent)
- Bleeding accompanied by pain or palpable mass may necessitate an abdominal ultrasound
- If a bleeding disorder is suspected, consider Platelet function assay (PFA) 100 and von Willebrand screen should be done (but not during acute bleeding or with recent NSAID use)

Management

Management is largely based on severity of the bleeding and degree of anaemia (Table 4).[3] The

Table 4:

Severity	Definition	Management	Follow up
Mild	Duration of menses (>7 days) or shorter cycles (<3 weeks) for two months in succession, with slightly or moderately increased bleeding, a usually normal (≥12 g/dL) or mildly decreased (10-12 g/dL) hemoglobin value	Outpatient management: Reassurance and Observation NSAIDs (mefenamic acid) and Tranaxemic acid may help to decrease excessive flow during menses Iron supplementation with 60 mg elemental iron per day	Re-evaluation should be done at three months or sooner if the bleeding persists or becomes more severe.
Moderate	Moderately prolonged or frequent (every 1-3 weeks) menses, with moderate to heavy bleeding and a hemoglobin level of ≥10 g/dL	Outpatient management: NSAIDs / Tranaxemic acid, Iron supplementation, Hormonal therapy:- Monophasic COCs*(containing 30 mcg of ethinyl estradiol)- one pill 8-12 hourly until the bleeding stops, then to continue with one pill per day for a total of at least 21 days. Increase dose to 2 pills per day if bleeding reccurs. Or Progestins like norethisterone, Medroxyprogesterone acetate 20-30 mg daily is given for 3 days to arrest haemorrhage. The progestogen may then be continued at a lower dose for 21 days followed by short-term management of 3 months.	COCs treatment is continued for 3-6 months until the hemoglobin level reaches ≥12 g/dL.
Severe	Heavy bleeding with a hemoglobin level of <10 g/dL	Inpatient management ; Blood transfusion is necessary in cases of severe anemia. Supplementation of 60-120 mg elemental iron must be started as soon as the patient is stable enough to take oral pills. Tranexamic acid 1g TDS for 4-5 days Hormonal therapy:- Medroxyprogesterone acetate 10–20 mg twice daily, Norethisterone 10 mg twice daily & continue for approximately 3 weeks, decreasing frequency of dosing to once daily treatment after 7–10 days. or COCs six to eight hourly for 2-3 days until bleeding slows down or till bleeding stops and then every 12 hours for 2 weeks and continue with one pill a day until a hemoglobin level of ≥10 g/dL is reached and at least for a total of 21 days.	High-dose progestin treatment induces stabilizing predecidual changes in a thickened, vascular, and fragile endometrium. However, a substantial amount of tissue remains to be shed upon progestin withdrawal, resulting in a so-called medical curettage

*COC- combined oral contraceptives

primary objective of treatment in adolescents with anovulatory bleeding is to induce or restore the natural control mechanisms that are not operating i.e. orderly, synchronous growth, development and shedding of a structurally stable endometrium.[5]

If irregular menses or HMB persists after hormone therapy for three months or recurs after cessation of therapy, all adolescents should be assessed for uncommon structural causes such as polyps[6].

Amenorrhoea in Adolescents

Amenorrhea is absence of menstruation. It could be Primary or Secondary and needs evaluation when any of the following criteria are met:[5]

Primary Amenorrhoea

- No menses by age 14 in the absence of growth or development of secondary sexual characteristics
- No menses by age 16 regardless of the presence of normal growth and development of secondary sexual characteristics

Secondary Amenorrhoea

- In adolescents who have menstruated previously, no menses for an interval of time equivalent to a total of at least 3 previous cycles or no menses over 6 months.

The causes of amenorrhea in adolescents are shown in Table 5.

Table 5: Aetiology of primary and secondary amenorrhoea

Primary amenorrhea	Secondary amenorrhea
1. Genetic abnormalities • Turner syndrome • Gonadal dysgenesis • Kallmann syndrome **2. Anatomic** • Imperforate hymen • Transverse vaginal septum • Mayer-Rokitansy-Kuster-Hauser(MRKH) Syndrome **3. Hypothalamic/pituitary** • Functional hypothalamic amenorrhea • Idiopathic hypogonadotropic hypogonadism • Delayed adrenarche • Delayed Gonadarche • Constitutional delay • Craniopharyngioma, Sellar masses • Germinoma, Langerhans cell histiocytosis **4. Ovarian** • Primary ovarian insufficiency • Autoimmune oophoritis • Polycystic ovary syndrome **5. Androgen insensitivity syndrome** **6. Congenital Adrenal Hyperplasia** • 21- hydroxylase deficiency	**1. Pregnancy** **2. Breastfeeding** **3. Hypothalamic** • Functional hypothalamic amenorrhea • Tumors of the hypothalamus **4. Pituitary** • Hyperprolactinemia • Sheehan syndrome • Radiation • Pituitary gland lesions **5. Uterine** • Endometrial Tuberculosis(TB) • Asherman syndrome **6. Ovarian** • Premature ovarian failure • Polycystic ovary syndrome **7. Systemic** • Chronic diseases • Type 1 diabetes mellitus • Celiac disease **8. Thyroid** • Hypothyroidism (more common) • Hyperthyroidism **9. Adrenal disease** • Tumors **10. Medications** • Psychotropics, Contraceptives

Assessment of Adolescent with Amenorrhoea

A careful medical history and detailed physical examination provides valuable diagnostic clues.

- Patients should be asked about eating and exercise patterns, change in weight, presence of previous menses, medication use, chronic illness, presence of galactorrhea, and symptoms of androgen excess, abnormal thyroid function or vasomotor instability, sexual history, pregnancy.
- Family history should include age at menarche and presence of any chronic disease.
- A thorough examination should include patient's height, weight, body mass index, thyroid palpation and Tanner staging. Presence of acne, virilization, or hirsutism is important to rule out hyperandrogenemia.
- Investigations should include pregnancy test, serum FSH, LH, serum estradiol, thyroid profile, serum prolactin. Karyotyping and other genetic testing, pelvic ultrasound and /or MRI head for pituitary should be considered if blood tests are not suggestive of specific diagnosis.

Complete cessation of menses before the age of 40 is most commonly defined as 'premature ovarian failure' (POF) which coincides approximately with the youngest 1% of the frequency distribution of the age of menopause. For every decade before 40 the prevalence of POF is estimated to decrease by a factor of 10. Thus in presence of a normal karyotype 1:1,000 women at 30 have POF, 1:10,000 at 20 and 1:100,000 women will present with gonadal failure and primary amenorrhoea.[7]

A stepwise investigation flowchart has been shown in figure 1 and figure 2 to reach a diagnosis.[8,9]

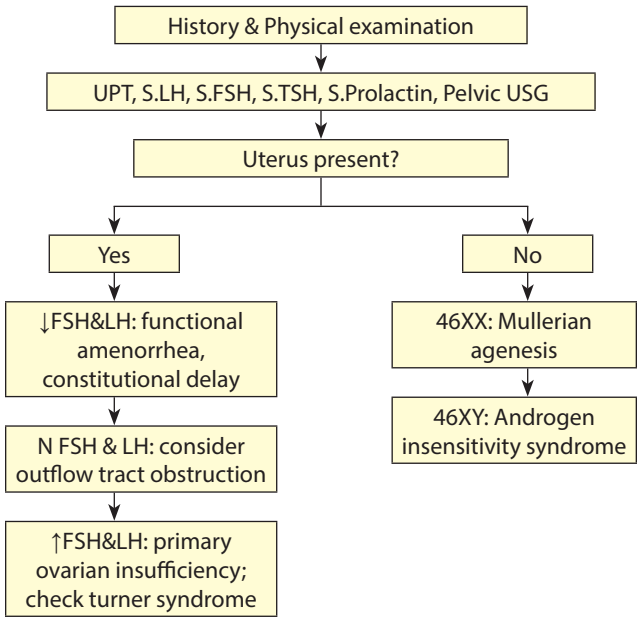

Fig 1: Flowchart for primary amenorrhea

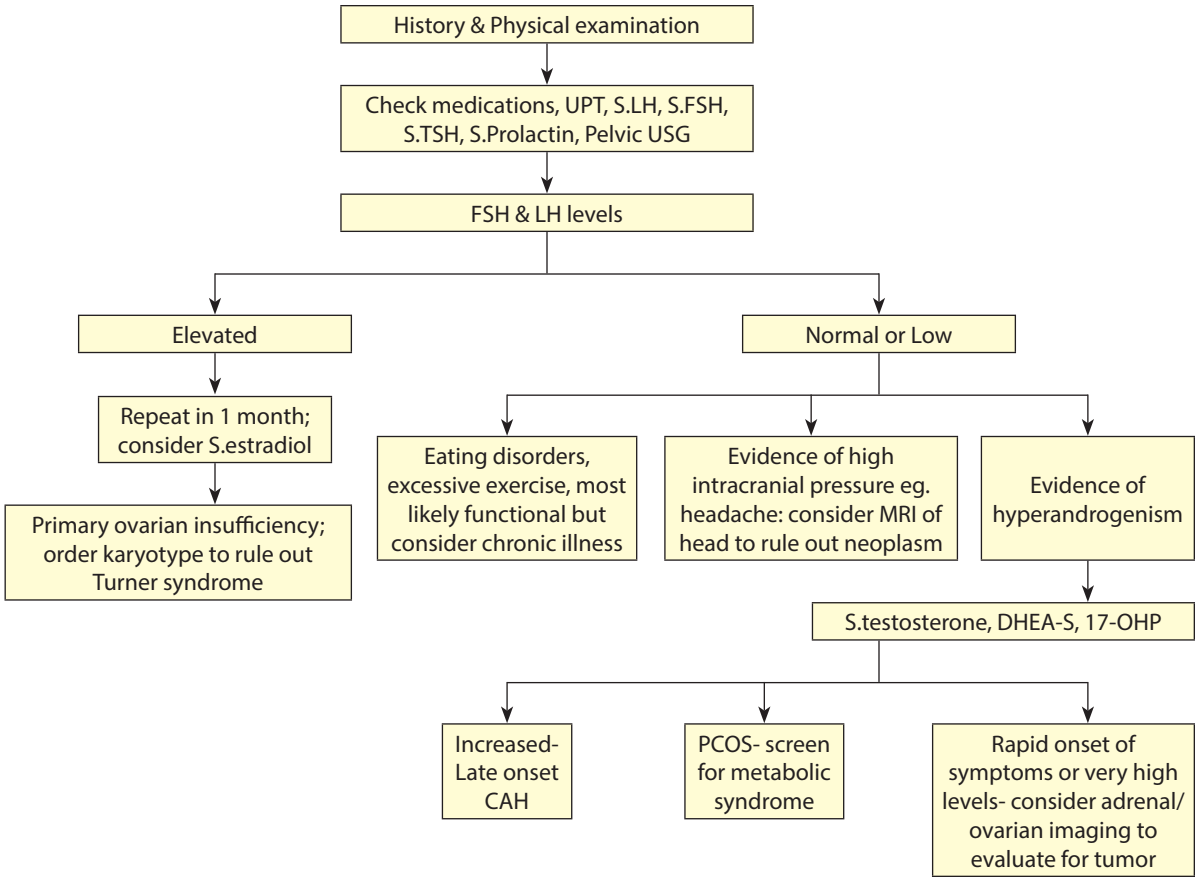

Fig 2: Flowchart for secondary amenorrhea

Managing Primary Amenorrhoea

- Treating the congenital anomalies.[5,10,11]

  Surgical correction of imperforate hymen with cruciate incision in the center of distended membrane should not be delayed. Excision or dissection of transverse septum and primary anastomosis of upper and lower vaginal margins with or without graft depending upon length of atretic segment is preferred. Distension at the introitus with valsalva manoeuver helps to differentiate between imperforate hymen and transverse septum. Surgical treatment of cervical atresia is rarely successful and hysterectomy is invariably required. The ovaries should be retained to provide benefits of estrogen and to allow for the possibility of future childbearing by removing mature oocytes for in vitro fertilization/ surrogacy. Adequate vaginal length can be achieved by vaginoplasty procedure or non-invasively by regular use of dilators for patients with MRKH syndrome/ Mullerian agenesis.[12]
- Adolescents with gonadal failure and hypergonadotropic hypogonadism require cyclic estrogen and progestogen therapy for the initiation, maturation, and maintenance of secondary sexual characteristics starting with conjugated estrogens or ethinyl estradiol per day. High doses of estrogen should be avoided in females of short stature as this can cause the epiphyses to close prematurely. In order to prevent hyperplasia, estrogen is given in combination with progestogen.
- Hyperprolactinemia and prolactinomas respond well to dopamine agonists. Treatment with either drug should begin with a low dose (e.g., bromocriptine 1.25 mg at bedtime; cabergoline 0.25 mg twice weekly) and increased gradually, guided by serial prolactin levels obtained at approximately monthly intervals.[5]
- Specific therapies can target underlying eating disorders such as anorexia nervosa or malnutrition. Individuals diagnosed with Kallman syndrome for hypothalamic amenorrhea may be treated with hormone replacement therapy. Swyer syndrome (pure gonadal dysgenesis- 46XY) usually first becomes apparent in adolescence with delayed puberty and amenorrhoea due to the fact that the gonads have no hormonal or reproductive potential. A high incidence of gonadoblastoma and germ cell

malignancies has been reported, and therefore, the current practice is to proceed to a gonadectomy once the diagnosis is made.[13] Adolescents with androgen insensitivity syndrome also require gonadectomy followed by hormone replacement therapy.

Managing Secondary Amenorrhea

It depends on the underlying cause of the amenorrhea.[5,14,15,16]

- Polycystic ovary syndrome (PCOS) in adolescents is treated with lifestyle modifications, metformin for insulin resistance, cycle control with combined oral contraceptives or endometrial protection with progestins - (medroxyprogesterone acetate depot injection, etonogestrel subcutaneous implant, or levonorgestrel intrauterine system).
- Thyroid disorders are treated with thyroxine replacement in hypothyroidism or with thioamides, ablation, or surgery in hyperthyroidism.
- Bromocriptine, cabergoline, or excision of prolactinoma are used to treat hyperprolactinaemia.
- Ovarian failure is managed with hormone replacement.
- Endometrial TB is diagnosed by endometrial biopsy and treated with anti-tubercular drugs. Menstrual function may not resume even after treatment due to extensive destruction of endometrium and adhesion formation. Asherman's syndrome is suspected when there is no withdrawal bleed after sequential treatment with estrogen and progestogen and may be treated with hysteroscopic lysis of adhesions either using sharp dissection using hysteroscopic scissors, electrodissection or with laser. Cervical stenosis is treated with cervical dilation.

Conclusion

Abnormal uterine bleeding is the most frequent complaint among adolescents which brings them to gynaecologists. Anovulatory bleeding due to incomplete maturation of HPO axis is the most common cause of AUB in adolescents with heavy menstrual bleeding being the most frequent presentation. Amenorrhea can result from congenital or acquired disease or dysfunction at any level in the system and can involve more than one mechanism. A methodical and systematic approach should be used to evaluate, reach a diagnosis and treat the condition along with emotional support in the adolescent age group.

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Sex Education and Contraception in the Adolescent

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Adolescent Sex Education

Sex education means adoption of an age appropriate, socio-culturally relevant approach to teach about sex and relationships by providing accurate scientific information. It should include teaching about human sexuality, anatomy of human sex organs, sexual reproduction, sexual orientation, abstinence, and contraception.[1] Knowledge related to sexually transmitted infections (STI), protection from sexually transmitted infections and reproductive rights & responsibilities is also included in Sex Education.[1]

Sex Education is very relevant in the present world. Despite the POCSO Act, National Family Health Survey 4 (NFHS-4) data reveals that 2.1% of adolescents were already mothers or pregnant at the time of the survey. NFHS-5 states that adolescent fertility rate in Maharashtra is 47%.[2] In Delhi abortion rate of adolescents was 1.15% (April-Sep 20).

The provision of sex education to adolescents is an important preventive tool as this is the time they are highly likely to experiment and involve in risky behaviour that has the potential to influence the future quality of their health. Moreover, these adolescents find themselves in a complex web of many preventable and treatable problems of nutrition, early and unintended pregnancy, unsafe sex leading to STD/HIV, sexual abuse, gender based violence, mental health issues etc. Besides, incorrect information from the internet or through peers has the potential to create misunderstanding in the youth making them less likely to adopt healthy practices and attitudes toward sex.

Appropriate and evidence-based education about human sexuality and sexual reproduction should be provided by medical professionals, by school teachers, by parents and religious leaders. Parents should not hesitate to talk to their adolescents, listen carefully & provide relevant information and themselves adopt good sexual behaviour. Schools can contribute by including sex education in the school curriculum along with special training of teachers and instructions must be given to them that the chapter related to reproduction should not be skipped. Awareness can be created by organizing talks in school, colleges and through health melas. It can help children and adolescents make informed, positive and safe choices about healthy relationships, responsible sexual activity and their reproductive health.

Adolescent Friendly Health Clinics

The Ministry of Health & Family Welfare, in 2005, created the Adolescent Reproductive and Sexual Health (ARSH) strategy as a component of NRHM & RCH II. The ARSH strategy focused on a clinic-based approach through capacity building of different cadres of health workers as well as reorienting and rebranding the public health facility as an Adolescent friendly health clinic.

The clinic can be a 'stand alone clinic' or incorporated within the existing health care facility with clinical services of a Gynecologist, Psychiatrist and a Clinical Psychologist. It should be adolescent friendly with privacy, appropriately displayed IEC material and run by a trained counsellor.[2] The counsellor should give adequate time, should avoid assumption about reason for visit, be non judgemental about sexual behavior and avoid moralizing about sex, sexuality, sexual behaviour and contraceptive advice. General counseling about general health and reproductive health needs should be provided to all clients visiting the clinic. Method specific counseling is to be provided to seekers of contraception.[1,2]

Rashtriya Kishor Swasthya Karyakram (RKSK) replaced ARSH in 2014 in order to reach out to all adolescents including male/female, rural/urban, unmarried/married, in/out of school in their own environment like school, family or community. The programme broadened the focus beyond sexual and reproductive health (SRH) to include non-communicable diseases, nutrition, mental health, substance misuse and injuries and violence. There was a paradigm shift from 'facility-based services' to 'community-based interventions' like Peer Education (PE), Quarterly Adolescent Health Day (AHD), Weekly Iron and Folic Acid Supplementation Programme (WIFS), Menstrual Hygiene Scheme (MHS) along with convergence with various existing programmes within Health & Family Welfare and other departments.

Contraception in Adolescents

Contraception is important for prevention of unintended pregnancy in adolescents and a method that they will be able to adhere to and which best meets their biopsychosocial needs should be advised it is also important incorporate messages about additional barrier use specifically for STI pevention. However, they should have access to a wide range of option. Discussion about client's need is essential prior to any contraceptive advice. Client can be unmarried, nulliparous, newly married, postpartum, post abortion, in a monogamous/ polygamous relationship, unmarried with occasional exposure (UPSI- unprotected sexual intercourse) or a rape victim.[3]

For girls seeking contraceptive advice a '**cafetaria approach'** from the available **contraceptive basket** should be offered with method specific counseling. Contraceptive basket provided by **Government of India (GOI)** contains

- Copper containing intrauterine contraceptive device (Cu IUCD) and Injection ANTARA as Long Acting Reversible Contraception (LARC)
- Oral hormonal pills MALA N (21 combined hormonal pills of Ethinyl estradiol 30 microgram & Levonorgestrel 0.15mg and 7 Ferrous fumarate Tablets), Non-hormonal pill CHHAYA (containing 8 tab of Centchroman- ormiloxifene 30mg)
- EZY pill (levonorgestrel 1.5 mg one tab) as emergency contraception for females.
- Condoms for males as barrier method.[3]

Private set up in India also have LNG-IUCD, progesterone only IMPLANT as LARC, Injectable combined hormones to be taken monthly, Combined oral pills containing varying combination of ethinyl estradiol and progestins like levonorgestrel/ desogestrel/ drosperinone, POP (progesterone only pill) containing desogestrel/ levonorgestrel, Female condom/ vaginal diaphragm/ cervical cap as barrier methods for female and vaginal spermicide. In some countries oral MIFEPRISTONE and ULIPRISTOL are also available as emergency contraception.

World Health Organization Medical Eligibility Criteria for contraception

Health concerns of adolescent girls regarding contraception should be given due consideration while providing them contraceptive advise. The method should be preferably easy to use, effective, should have minimum effect on subsequent fertility, no pain during/ after use, should have minimum side effects like acne, weight gain, changes in menstrual bleeding pattern, mood change, risk of infection/ cancer, bone health. For client in polygamous relationship, condom for male partner is essential apart from contraceptive for the female. For girls having other medical disorders, MEC category should be given important.

Benefits and Risks of different Methods:

1. **Combined Pills**

   COC PILLs are highly effective with pregnancy rate 0.3 per 100 women per year in perfect use but easy to forget as daily consumption is required. Fertility is restored immediately after discontinuation, menstrual bleeding decreases with improvement of dysmenorrhoea. Acne improves, no weight gain, mood change may occur but no evidence of depression. There is less risk of endometrial, ovarian, colon cancer. Bone health improves.

   Starting hormonal contraception in adolescents: Prior to menarche regular hormonal contraception is not recommended. Progesterone only emergency contraception can be given if required. QUICK STARTING - as advocated, is immediate administration of a hormonal contraception rather than the conventional start that is waiting till next menstruation or withdrawal bleeding when a long acting contraception can be started[3]. This is done to avoid non-compliance. However limited evidence is currently available that Quick Starting reduces unintended pregnancy or increases compliance.

2. **Injection Depot Medroxyprogesterone Acetate (DMPA)**

   Highly effective LARC with pregnancy rate 0.3 per 100 women per year. Client does not need any method for 3 months, but fertility returns 15-49 weeks after last injection. Body weight may increase, menstrual bleeding pattern changes to irregular/ scanty or amenorrhoea may occur. Incidence of pelvic inflammatory disease and endometrial cancer is less. Loss of bone mineral density occurs which is a concern for adolescent But this is reversible. Lumbosacral BMD returns to baseline level after 60 wks. of discontinuation, gain above baseline occurs after 180 wks. Therefore, recommended use is for two years only. Irregular bleeding is the commonest cause of discontinuation. This can be managed with tab MIFEPRISTONE 50 mg every 2 weeks / DOXYCYCLINE 20 mg twice daily for 5 days /

tab MIFEPRISTONE 25 mg twice daily for 1 day along with ETHINYL ESTRADIOL 20 microgram daily for 4 days.[4]

3. **IUCD**

   Highly effective LARC with pregnancy rate <0.2 per 100 women per year[4], forgettable contraception for 5 years at least. Slight pain is felt during insertion and subsequent dysmenorrhoea is common. Menstrual pattern may change in first 3-6 months, but it is compatible with most medical disorders

4. **Implants**

   Highly effective LARC with pregnancy rate 0.38 per 100 women per year. A forgettable method, effective 3yrs. for2 rods and 5 years for 6 rods containing levonorgestrel. Local anaesthesia is required for insertion & removal. Menstrual bleeding may be irregular in first 90 days but settles.[4] Amenorrhoea may occur with Etonorgestrel. Side effects like acne may appear, may worsen, and may improve also. Change in body weight, mood may occur, but no risk of cancer.

5. **Emergency Contraception (EC)**

   After UPSI, EC is to be taken as soon as possible / within 3 days for best results. Progesterone only LEVONORGESTREL 1.5 mg single tab has failure rate of 1 pregnancy per 100 women year.[4] With COC pill containing ethinyl estradiol and levonorgestrel pregnancy rate is 3.2%. With Mifepristone 10 mg single dose pregnancy rate is 1.35. Ulipristol single 30 mg tab can also be used. All tablets may be used up to 5 days but efficacy decreases. IUCD can be inserted up to 7 days, efficacy is 100%.[4]

6. **Barrier Method**

   Condoms for male- before use, size, expiry date, lubricants need to be checked. Use of non-oil based lubricants reduces the risk of breakage of latex condoms. Condoms lubricated with spermicide Nonoxynol 9 may increase risks of HIV & STI transmission.[4]

Conclusion

Sex education of adolescents at an appropriate age is important to help improve sexual and reproductive health of the society and also to reduce STD, sexual abuse, unwanted pregnancy, abortions and gender-based violence. Various academic organization should come forward and play a role in Adolescent health programmes to bring about improvement in adolescent health which has been an ignored subject for long.

Though Oral Pills and Condom remain the two most commonly used methods[3], LARC may also be recommended in select cases of adolescent girls as they are a one-time method with less failure rate and good cost effectiveness.

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When young people have knowledge and control over their sexual health choices, the ripple effects benefit everyone in our community.

- Jenny Briggs

Quiz - Adolescent Gynaecological Concerns

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1. **When is world menstrual hygiene day celebrated all over world?**
   a. 28th June
   b. 28th May
   c. 28th September
   d. 28th October

2. **Free Androgen index is**
   a. Free testosterone multiplied by SHBG multiplied by 100
   b. Free testosterone divided by SHBG multiplied by 100
   c. Total testosterone divided by SHBG multiplied by 100
   d. Total testosterone divided by 100 multiplied by SHBG

3. **Historically who is credited with first describing symptoms of PCOS**
   a. Stein & Levanthal 20th Centuary AD
   b. Soranus 2nd Century AD
   c. Valisneri 17th Century AD
   d. Hippocrates 5th Century AD

4. **How to diagnose polycystic ovarian morphology(PCOM) using endovaginal ultrasound probe of 8MHZ?**
   a. More than 10 follicle and volume of ovary is more than 10 ml
   b. More than 20 follicle and volume of ovary is more than 20 ml
   c. More than 20 follicle and volume of ovary is more than 10 ml
   d. More than 10 follicle and volume of ovary is more than 20 ml

5. **Drugs causing Hirsuitism are all except:**
   a. Cyproterone acetate
   b. Anabolic steroids
   c. Progesterone containing OC pills
   d. Glucocorticoids

6. **Secondary amenorrhea in adolescent can be defined as :**
   a. Lack of menarche by 15 yr of age
   b. More than 90 days without a menstrual period, after previously mensturating
   c. More than 60 days without a menstrual period, after previously mensturating
   d. Lack of menarche by 3 years after onset of breast development

7. **How often tampon should be changed during mensturation**
   a. Every 24 hr
   b. Every 4-8 hr
   c. Twice during a day
   d. Every 2 days

8. **The right age to begin sexuality education is:**
   a. Around 5 years
   b. Around 18 years
   c. Around 12 years
   d. No specific age

9. **Contraindications for adolescent Metabolic and Bariatric Surgery are :**
   a. A medically correctable cause of obesity
   b. An ongoing substance abuse problem (within the preceding yr)
   c. A medical, psychiatric, psychosocial, or cognitive condition that prevents adherence to postoperative dietary and medication regimens.
   d. Current or planned pregnancy within 12 to 18 months of the procedure
   e. All of the above

10. **Leading cause of death in 15-19 yr aged girls**
    a. Diarrheal diseases
    b. Pregnancy and childbirth related complications
    c. Tuberculosis
    d. Self harm

11. The ministry of Law and Justice published "THE TRANSGENDER PERSONS (PROTECTION OF RIGHTS) ACT," in year

a. 2017
b. 2018
c. 2019
d. 2020

12. Tetrahydrolipstatin, approved by USFDA is the first-line adjunct drug to behavioural interventions for obesity in Adolescent. It inhibits digestive lipases and blocks approximately following percentage of dietary fat absorption.

a. 10-15%
b. 25–30%
c. 35-40%
b. 45-50%

13. The SCOFF (Sick, Control, One stone, Fat, Food) is a screening tool is used for

a. PCOS
b. Hirsutism
c. Obesity
d. Eating disorders

14. Condoms lubricated with spermicide Nonoxynol 9 may change the risks of HIV & STI transmission in following way.

a. increases
b. decreases
c. does not effect
d. not known.

15. Progesterone only LEVONORGESTREL 1.5 mg single tab has failure rate of ——— pregnancy per 100 women years.

a. 1
b. 2
c. 3
d. 4

Quiz Answers

1:b	2:c	3:d	4:c	5:a	6:b	7:b	8:d
9:e	10:b	11:c	12:b	13:d	14:a	15:a	

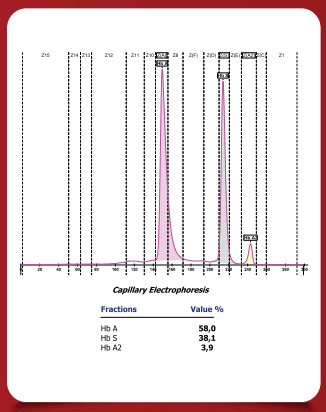
Young people need to be at the center of decisions that affect their own lives and their own bodies.

- Nathalie Nkoume

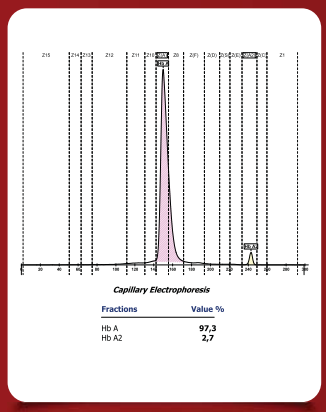
HIGH RESOLUTION AND CLEAR-CUT SEPARATION OF

HEMOGLOBIN FRACTIONS

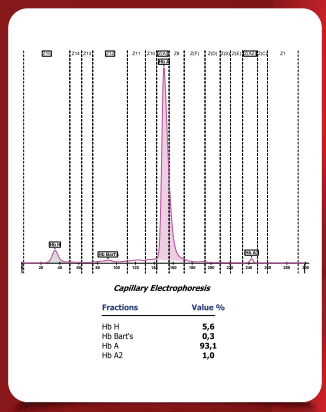
BY CAPILLARY ELECTROPHORESIS



HB S



NORMAL SEPARATION



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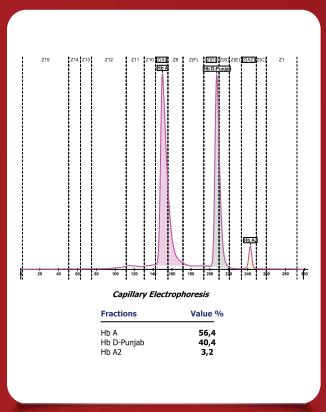

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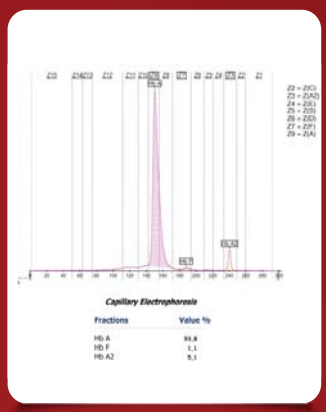
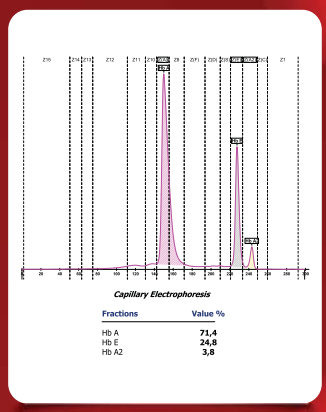


BETA-THALASSEMIA



HB E

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