Indian Society for Pediatric & Adolescent Endocrinology
ISPAE

Newsletter of the Indian Society for Pediatric & Adolescent Endocrinology (ISPAE)

CAPE NEWS

www.ispae.org.in

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MESSAGE FROM THE EDITOR

Dear Friends,

Wish you all a Happy Ganesh Chaturthi, Onam and a very Happy Diwali. I would like to introduce the new editorial team for the ISPAE newsletter "CAPE NEWS", comprising of Dr. Sudha Rao (Mumbai), Dr. Hemchand Prasad (Chennai), Dr. Shalmi Mehta (Ahmedabad) and Dr. Bhanu Bhakhri (Hrishikesh). Our young editorial team is very enthusiastic and we hope to keep up the "Gold Standard" set by Dr. Anju Virmani and her team in the past.

The newsletter is a forum for keeping all the Pediatricians and Pediatric Endocrinologists up to date with the recent publications, upcoming meetings/courses and activities of ISPAE and to increase awareness in the field of Pediatric Endocrinology.

We have introduced a few new sections in this issue including a crossword puzzle to keep everyone mentally stimulated. Other new features include patient information on common pediatric endocrine disorders, and history of discovery of a drug/disease. We would welcome new ideas and comments to improve the quality of the newsletter from all of you.

The newsletters would also be available for viewing at the ISPAE website. I look forward to seeing you all at the forthcoming ISPAE meeting at Bengaluru.

Dr. Archana Dayal Arya
Editor of CAPE NEWS (ISPAE Newsletter)
2013-2014

Inside this issue…

President's Message

Dear Friends,

It gives me great pleasure to welcome the new editorial team of the CAPE news (official electronic news letter of Indian Society for Pediatric and Adolescent endocrinology) led by Dr. Archana Dayal-Arya.

The previous team led by Dr. Anju Virmani did a wonderful job for last several years making this venture a success. CAPE news for last many years has made the pediatric and pediatric endocrine community aware of recent articles, guidelines, news and events that happen in India and globally.

Indian Society for Pediatric and Adolescent Endocrinology has lots of challenges ahead of it in terms of increasing awareness, conducting more pediatric endocrine CMEs and educational programmes, establishing guidelines for practicing pediatricians and running more training courses in pediatric endocrinology. CAPE newsletter will surely be a useful medium to reach more pediatricians, pediatric endocrinologists and endocrinologist. We look forward to more scientific contributions from the pediatric endocrine community to this newsletter.

I am sure the new team will take CAPE news to newer heights and continue to do the job of education and awareness in the area of pediatric and adolescent endocrinology. I extend a very warm welcome to the new team of CAPE news editorial board and wish them all the success in this endeavor.

Dr. Vaman Khadilkar
President of ISPAE 2013-14

Secretary's Message

Dear Esteemed Members,

Greetings from the ISPAE office! It is indeed nice to communicate with you all.

Lately, there have been some changes in the ISPAE communications team. Congratulations to the new Team of ISPAE Newsletter under the able hands of Dr. Archana Arya the Editor of newsletter. This is the 1st issue being brought out by the new Team, my best wishes to them.We gratefully acknowledge the immense contribution of Dr. Anju Virmani who has been nurturing the official bulletin CAPE news of Pediatric and Adolescent Endocrinology since its inception for the past many many years and brought it to great height and standards. Congratulations also to the new web team with Dr. Shaila Bhattacharyya as the web master. Best wishes to her team also.The website started by Dr. Vijaylakashmi Bhatia and later maintained by Dr. Ravikumar Karnam were also making tremendous contributions for the society both at international and national arena.

I hope you must have registered for the forthcoming Biennial ISPAE meet being held at Bangaluru on 30th Nov., 1st and 2nd Dec. 2013. Dr. P . Raghupathy, Dr. Vaman Khadilkar and Dr. Shaila Bhattacharya have organized a wonderful academic program consisting of galaxy of international and national faculties to share their expertise and experience to enrich you.

I also welcome the "young" participants who have been lucky enough to be selected for the Pediatric Endocrine Training Program and are going to participate and get their training with the expert Faculties. I am sure they will also have a great experience. Dr. Preeti Dabadghao has worked very hard towards the coordination of this program.

If you have been contributing towards the community programs on issues related to Pediatric and Adolescent endocrinology we would like you to send your reports to ISPAE for circulation in the news letter.We welcome all the new members who joined during this period and we encourage the membership drive.We reiterate that your suggestions and inputs towards the growth of our society are welcome.Once again a kind reminder to make your plans in advance for attending the Bangluru Meet. You can visit the website www.ispae2013.org for further details. For more information on all of our activities, please visit the ISPAE website at : www.ispae.org.in

With best wishes to all
Dr. Sangeeta Yadav
Secretary cum Treasurer

Message from ISPAE 2013 organising Team

Dear Members

Greetings from Bengaluru, and from the team of 3rd Biennial Conference of ISPAE & ISPAE-PET 2013! The preparations are in full swing. The venue for the ISPAE – PET is Golden Palms Avenue, Off Tumkur Road, Bengaluru (25 kms from Bengaluru Railway Station and 42 kms from Bangalore International Airport). The venue for ISPAE Conference is JW Marriott Hotel, Vittal Mallya Road, Bengaluru (60 min drive from Bangalore International Airport). The International speakers includes Dr. Paul Haufmann (Auckland, New Zealand), Dr. Greene (Scotland, UK) , Dr. Olaf Hiort (Lubeck, Germany) , Dr. Reiko Horikawa (Tokyo, Japan), Dr. Nicholas J Bishop (Sheffield, UK), Dr. Margaret Z (Melborne, Australia), Dr. Khalid Hussain (London), Dr. Caroliene Fall (Southampton,UK) and Dr. Jean Claude (Paris, France). They will also be participating in ISPAE-PET. The National Faculties are Dr. PSN Menon, Dr. Raghupathy, Dr. Vijayalakshmi Bhatia, Dr. Nalini Shah, Dr. Vaman Khadilkar, Dr. Sudha Rao, Dr. Sarah Mathai, Dr. Shaila Bhattacharyya, Dr. Anurag Bajpai, Dr. Preeti Dabhadgao, Dr. Sangeetha Yadav, Dr. Usha Shriram, Dr. Anuradha Khadilkar, Dr. Archana Dayal, Dr. Ahila, Dr. Anju Seth, Dr. Kavitha Bhat, Dr. Prasanna Kumar, Dr. Arpan Dev Bhattacharyya, Dr. Anna Simon, Dr. Rajesh Khadgawat and Dr. Subrata dey.

The registrations as of now are 150. The last date for abstract submission is 30th September 2013. Major pharmaceutical companies supporting so far are Novo Nordisk, LG Life Sciences, and Ranbaxy. For further information please visit conference website www. ispae2013.org

Dr Shaila Bhattacharya
Organising Secretary, ISPAE 2013

Warm welcome to our new members

Dr Ruchi Parikh, Mumbai
Dr Vineet Surana, New Delhi
Dr Shyam Kishore, Dwaraka
Dr Ranjani Harish, Chennai
Dr Anjana R M, Chennai
Dr Ranjith Unnikrishnan, Chennai
Dr Kalpana Thai, Chennai
Dr Amutha Anandakumar, Chennai
Dr Sahana Pranab kumar, Kolkata
Dr Deepa S, Bengaluru
Dr Ruchi Nadar, Chennai
Dr Naina Bhat, Bengaluru
Dr Vignesh G, Lucknow
Dr Ruchi Mehta, Ahmedabad

BONE AGE ASSESSMENT IN PEDIATRIC ENDOCRINOLOGY

Dr Hemchand K Prasad, Consultant,
Department of Paediatric Endocrinology, Mehta Children's Hospital, Chennai

Paediatricians and Paediatric endocrinologists recognise that assessment of Bone age reflects the child's true biological age. Skeletal age is the only size independent indicator of biological maturity applicable from birth to adulthood. Skeletal age often corresponds to height age in pathological states.

Skeletal age is a very valuable tool in paediatric endocrinology. It helps the clinician to interpret laboratory values and make therapeutic decisions. For example:

a) Short Stature: Significant retardation of bone age by >2years is a marker of pathological cause of short stature over normal variants (like constitutional delay). Final adult height can be predicted using the appropriate methods in normal children.

b) Tall Stature: Decision to decide hormonal therapy, determination of appropriate age to treat and effect on final height is highly dependant on bone age.

c) Pubertal disorders: Hormonal values need to be interpreted in conjunction with the bone age. Elevated LH, FSH in a girl <8 years is abnormal; however if the skeletal age is >9 years, then it is normal. In girls with early breast development, advanced bone age by >2years suggests precocious puberty as a cause over simple premature thelarche.

Hormone replacement therapy in children with hypogonadism depends on the skeletal age, so as not to compromise the final adult height. Decision to initiate GnRH analogues for precocious puberty depends on the intensity of progression of puberty. Height < -2 SD for bone age indicates a very rapidly progressing form of precocious puberty.

Bone age may also be useful in sports for age assignment and in children in asylum to assign age.

Conventionally there are two methods to assign bone age

1. Greulich and Pyle method
2. Tanner White House method

Greulich and Pyle method:

Bone age estimation using this technique involves taking an X-ray of the non-dominant hand and comparing with the Greulich and Pyle atlas. The atlas was developed from Todds atlas in 1930 and high socioeconomic group children from United States of America in 1940. There has been no revision of the atlas since then.

The atlas consists of images at intervals of: 3 months till one year, 6 months till 5 year and annually till 19 year. The technique of assessment would be to compare the image of the index child with the image of the chronological ages image in the atlas (atlas method or the inspectional method). The instructions to use the method to arrive at the nearest bone age is provided in the atlas. Go step by step above and down till you can match to the nearest picture. The assessor would concentrate on Carpal bones during infancy, shape of epiphysis description in mid childhood and fusion of bones in adolescence Although this technique is said to be less accurate, it is said to be done within a period of two minutes.

Tanner Whitehouse Method

Method	Tanner whitehouse-1	Tanner whitehouse-2	Tannerwhitehouse-3
Year of development	1950	1975	2001
Sample	3000 children	2200 (Cross sectional – 3-16 y) 500 (longitudinal 1-21 y)	Similar
Population	British children	British and American	British, Belgian, Italian, Spanish, American and Japanese
Method	20 bones	13 and 20 bone	RUS and Carpal bone score
Nature of sample	Normal children	Normal and children with tall stature & growth retardation	Normal and pathological states

The morphology of the epiphyses is assessed and a skeletal maturity score of the bones are added and final score is matched with the normative data and skeletal age arrived at. It is widely recommended that TW-3 method be used in our country, but there is lot of difficulty in procuring the copies of TW-3. Hence most paediatric endocrine centres in India use the TW-2 to assess skeletal maturity.

A comparison of the two methods is presented in the Table below:

	Tanner Whitehouse	Greulich and Pyle method
Mean duration	7.5 minutes	2 minutes
Variability	Low	High
Accuracy	Better	Lower
Revision	Yes	No
Accounted for secular trend	Yes	No
Sample	Large	Small
Socio economic class	Mixed	High
Description	Verbal and illustration	Textual and visual
Minimum height prediction	5years	6years

Thus, considering the relative merits and demerits of the two techniques, Greulich Pyle Atlas may be a useful tool in a busy Paediatric clinic to screen children for delay or advancement of bone age. In Paediatric endocrine clinics, Tanner whitehouse method is useful to make therapeutic decisions and judge response to therapy.

History of Insulin

Dr Shalmi Mehta,
Paediatric Endocrinologist, Ahmedabad

Since 1923, for the last 90 yrs, a life of a diabetic is appreciated because of insulin. Today when we are taken up with all the advances that have been made in the recent times in Insulin, it would be worthwhile to recall and remember the pioneers who made a great contribution towards this.

It was the combined efforts of Frederick Grant Banting and Charles Herbert Best that led to the discovery of insulin. Banting was born on 14th November, 1891 in Alliston. After serving in the Canadian army, in 1919 he was offered a position in the department of Physiology. Not well versed with Physiology, one day he was asked by his Professor to prepare a lecture on carbohydrate metabolism. On his research into the topic, he came across an article "The relation of islets of Langerhans to Diabetes" by Dr. Moses Barron in the medical journal – Surgery, Gynaecology and Obstetrics. He realized that various attempts to treat diabetes with the extracts of pancreas had failed and he wondered why. It occurred to him that the product might be getting destroyed during the process of extraction probably due to the digestive ferment that the pancreas produced.

He wrote off in small black notebook "Tie off pancreas ducts of dogs. Wait six or eight weeks. Remove and extract". He approached Professor John James Rickard Macleod the then Professor of Physiology and Department Head at the University of Toronto to allow him to carry out research for the same. Professor J.J.R. Macleod grudgingly agreed

to let Banting use a small room and some dogs left over from his previous experiments. Banting requested Macleod to allow him an assistant for his experiments. Macleod supplied him 2 students Charles Herbet Best and Clark Noble as his lab assistants. Since Banting needed only one, they flipped a coin and Charles Best was selected to be his assistant.

They began work on May 16. Banting began by tying off the pancreatic ducts of a number of dogs, which was quite easy. Then he had to remove the pancreas from these dogs to make them diabetic. The plan was to extract the pancreas and inject in the diabetic dog in the hope of finding the substance responsible for sugar control. On July 27 after two failed experiments, a duct-tied dog was chloroformed. The shrivelled pancreas was removed, chopped into pieces and mixed with saline. A small extract was injected and within 2 hrs, the blood sugar fell considerably and the dog became conscious and wagged its tail. The effect of the injection was so dramatic that Banting and Best could hardly believe it; but further experiments made them sure that they had indeed found what they were looking for. They had succeeded in extracting the anti-diabetic hormone secreted by the islets of Langerhans. They called it 'isletin'. It was some time later that Macleod renamed it insulin, a word that had been suggested in 1910.

After multiple animal experiments, Banting and Best decided to have a first clinical test as soon as possible. The patient was Leonard Thompson, a 14 year old boy with severe diabetes who weighed only 65 pounds on admission on Dec 2, 1921. The "brown muck" was given as intramuscular injection 7.5 ml on both the buttocks, but Leonard developed severe abscesses. It was Dr. J.B.Colip who devised a technique for the purification of the extract. Subsequent injections showed marked improvement in the sugars and Leonard gained weight..

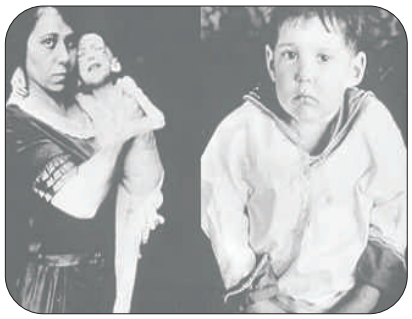
On May 3rd, 1922 Macleod officially announced the discovery of insulin to the medical world. Banting and Macleod were awarded the Noble Prize in 1923. However Best never received the Noble Prize.

Sir Frederick Grant Banting

Charles Herbert Best

Professor John James Rickard Macleod

Dr. James Collip



Leonard Thompson

PEDENDOSCAN

Dr Sachin Mittal, Mumbai and Editorial Board Members of CAPENEWS

BANTING SECTION

Coeliac disease, gluten-free diet and the development and progression of albuminuria in children with type 1 diabetes. Esha Gopee, Eva LM van den Oever, Fergus Cameron, Merlin C Thomas. Pediatric Diabetes, Volume 14, Issue 6 pages 455–458, September 2013 Although a diagnosis of coeliac disease (CD) may be confronting to children with type 1 diabetes and their families, The Authors hypothesize that children with CD have lower urinary albumin excretion, a marker of renal dysfunction. Participants with CD also showed slower progression in albuminuria over 5-yr of follow-up while a small but significant increase was observed in the children with diabetes alone.As urinary albumin excretion is continuously associated with the risk of kidney disease, it is possible to speculate that CD or its management confers a degree of renoprotection.

A Study of Bone Mineral Density and Its Determinants in Type 1 Diabetes Mellitus. Ameya Joshi, Premlata Varthakavi, Manoj Chadha, and Nikhil Bhagwat. Journal of Osteoporosis Volume 2013, Type 1 diabetes mellitus (T1DM) has been inconsistently associated with low bone mineral density (BMD) and increased fracture risk. Linear regression analysis showed that low BMD in T1DM patients was associated with poor glycaemic control, lower IGF-1 levels, less physical activity (in total population as well as in male and female subgroups), and lower body fat percentage (in females) and higher alkaline phosphatase level (in males)

SHEEHAN SECTION

Klein R.H, Alvarez-Jimenez R, Sukhai R.N et al. Pharmacokinetics and Pharmacodynamics of Orally Administered Clonidine: A Model-Based Approach. Horm Res Paediatr 2013;79:300-309 40 children referred for an oral clonidine test, a diagnostic procedure for suspected growth hormone (GH) deficiency, were studied for untoward effects, including bradycardia, hypotension and sedation. The authors concluded that clonidine concentrations during the test were higher than necessary according to model-based predictions. A lower clonidine dose may be sufficient and may produce fewer side effects.

Deal C, Hasselmann C, Pfäffle R.W et al. Associations between Pituitary Imaging Abnormalities and Clinical and Biochemical Phenotypes in Children with Congenital Growth Hormone Deficiency: Data from an International Observational Study. Horm Res Paediatr 2013;79:283-292 Patients with hypothalamic-pituitary abnormalities had more severe phenotypes than patients with idiopathic GHD. Additional hormonal deficiencies were found in 35% of patients with structural abnormalities, most frequently in patients with septo-optic dysplasia (SOD). Patients with the triad [ectopic posterior pituitary (EPP), pituitary aplasia/hypoplasia and stalk defects] had a more severe phenotype and better response to GH treatment than patients with isolated abnormalities.

HASHIMOTO SECTION

Thyroid Cancers in Children, Adolescents, and Young Adults With and Without a History of Childhood Exposure to Therapeutic Radiation for Other Cancers . Geneviève Sassolas. Thyroid. 2013 Jul; 23(7):805-10. The thyroid is highly sensitive to the carcinogenic effect of radiation in children. We compared, in patients with and without earlier childhood radiation, the features of papillary thyroid cancer (PTC) diagnosed in later childhood through young adulthood. Patients were from the Rhône-Alpes Thyroid Cancer Registry. Young adults with PTC associated with radiation therapy for nonthyroid neoplasms in childhood have a more aggressive initial presentation than young adults with sporadic PTC. The risk of recurrent disease in patients who received radiation in early childhood through adolescence and who developed PTC in late childhood through early adulthood is similar to those who did not receive radiation

F. Aghini Lombardi, E. Fiore, M. Tonacchera, L. Antonangeli, T. Rago, The Effect of Voluntary Iodine Prophylaxis in a Small Rural Community: The Pescopagano Survey 15 Years Later. JCEM 2013 98: 1031-1039. The authors evaluated the prevalence of thyroid disorders 15 years after a previous survey conducted before iodine prophylaxis. The authors studied 1148 residents in 2010 and 1411 in 1995. They observed that the prevalence of hypothyroidism was higher in 2010 vs 1995 (5.0% vs 2.8%, P = .005), serum thyroid autoantibodies (19.5% vs 12.6%; P < .0001) and Hashimoto's thyroiditis (14.5% vs 3.5%; P < .0001) were more frequent in 2010 than in 1995.

STEIN LEVENTHAL SECTION

Roe AH, Prochaska E, Smith M, Sammel M, Dokras A. Using the androgen excess-PCOS society criteria to diagnose polycystic ovary syndrome and the risk of metabolic syndrome in adolescents. J Pediatr. 2013 May;162(5):937-41. The authors studied 205 adolescents who were evaluated for PCOD, retrospectively and applied the AES criteria to recognize metabolic risk in them. Of the 205 adolescents evaluated, 66% were found to have PCOS based on the AE-PCOS criteria. The authors conclude that adolescents diagnosed with PCOS based on the AE-PCOS criteria are at a significantly increased risk of ≥1 metabolic abnormality.

Villa P, Rossodivita A, Sagnella F, Moruzzi MC, et al. Ovarian volume and gluco-insulinaemic markers in the diagnosis of PCOS during adolescence. Clin Endocrinol (Oxf). 2013 Feb;78(2):285-90. The authors studied 134 young girls with Ultrasound evaluation. The authors observed that an ovarian volume greater than 5·6ml increased the risk of PCOS by about 15 times (OR 16·25 IC 95% 6·3-41·3). In adolescent PCOS girls, the ovarian volume was significantly associated with circulating testosterone and insulin, and indices of insulin resistance. During early adolescence mean ovarian volume (MOV) evaluation may offer an effective means to screen and follow up young girls with irregular cycles in order to prevent the long-term metabolic disturbances of the polycystic ovary syndrome.

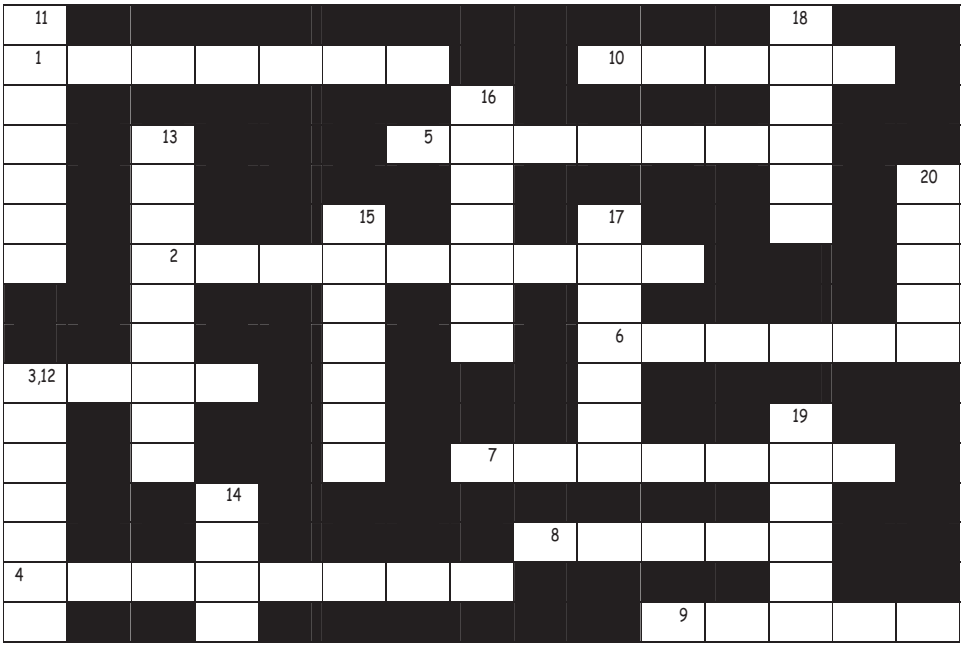
HARRY STEENBOCK SECTION

Atapattu N, Shaw N, Högler W. Relationship between serum 25-hydroxyvitamin D and parathyroid hormone in the search for a biochemical definition of vitamin D deficiency in children. Pediatr Res.2013,Sep2. In view of differing definitions of vitamin D deficiency based on serum 25-hydroxyvitamin D (25OHD) levels in various guidelines, the study was carried out in 214 children routinely admitted at Birmingham Children's Hospital, United Kingdom. The authors concluded by saying that vitamin D deficiency, based on PTH elevation, was best defined by a 25OHD level of < 34nmol/l. Since deficient calcium supply often co-exists with vitamin D deficiency and both can independently cause nutritional rickets, a threshold for the skeletal effects of vitamin D should not be based purely on 25OHD levels.

Syndromonomics – a crossword

Dr Hemchand K P, Consultant Paediatric Endocrinologist, Mehta Hospital, Chennai

What the mind does not know the eyes will not pick up ...
Here is a crossword on syndromes in paediatric endocrinology that one could encounter in our paediatric endocrine clinic
(Solution on page 16)



Clues:

	Across		Down
1	Small penis, cryptorchidism, bulging forehead, hypertelorism, depressed nasal bridge, short limbs, and "hemivertebrae"	11	46 XY DSD with streak gonads due to WT-1 mutation
2	Micropenis, hypospadias, hypothalamic hamartoma,postaxial polydactyly, and imperforate anus (first name)	12	Autoimmune thyroid disease with Addison's disease (autoimmune)
3	NSD-1 gene leading to cerebral gigantism	13	Type 1 diabetes mellitus with Addison's disease and autoimmune thyroiditis
4	Synonym for Partial lipodystrophy	14	Hypertension, polyuria, hypokalemic alkalosis, and low plasma renin activity due to an aldosterone-producing adrenal adenoma
5	Anosmia with hypogonadotrophic hypogonadism	15	Obesity, retinal dystrophy, deafness and diabetes mellitus
6	Pit-X2 mutation (Autosomal dominant, anterior chamber of eye anomalies, dental hypoplasia and protuberant umbilicus)	16	Shawl scrotum with hypertelorism and brachydactyly
7	Dyshormonogenesis with sensorineural hearing loss with goitre	17	Bone marrow failure with exocrine and endocrine pancreatic abnormalities
8	Obesity with microcephaly with prominent central incisors and ophthalmopathy	18	PTPN gene mutation with right sided cardiac abnormalities and turner phenotype
9	Synonym for 46 XY Complete gonadal dysgenesis	19	Hypoparathyroidism with short stature with medullary stenosis of long bones (first name only)
10	Growth hormone resistance syndrome	20	Thiamin responsive megaloblstic anemia with diabetes and hearing loss

Drug Info Page– Estrogen Preparations

Dr Bhanu K Bhakhri, AIIMS Rishikesh

Estrogens are primary female sex hormones. Natural estrogens are steroid derivatives, while some synthetic ones are non-steroidal. The common indications for use of estrogens in children are

Pubertal induction in children with hypogonadism: Started with low dose estrogen (5 µg ethinyl estradiol or 0.3 mg conjugated estrogen per day), gradually increased (5 µg ethinyl estradiol or 0.3 mg conjugated estrogen every 6 months) to reach adult doses (20 µg ethinyl estradiol or 1.25 mg conjugated estrogen daily). Estrogen patch can be used with advantage of better compliance.

Sex steroid priming (in short children with delayed puberty and bone age of 10 years or more) prior to growth hormone stimulation: conjugated estrogen 5 mg oral, night before and on morning of the test; ethinyl estradiol 50-100 µg per day for 3 consecutive days prior to test.

Topical application for labial adhesions: twice daily for 2 weeks.

Brand name	Manufacturer	Preparation	Approximate market price (Rs)
Ethinyl estradiol			
Evalon	Infar	3 X 10 (1 mg) tabs	70
		3 X 10 (2 mg) tabs	110
		1 mg/g cream (15 g)	100
Lynoral	Infar	0.01 mg X 10 tabs	15
		0.05 mg X 10 tabs	20
		1 mg X 10 tabs	30
Progynova	German Remadies	1 mg X 21 tabs	100
		2 mg X 21 tabs	150
Conjugated estrogens			
Premarin	Wyeth Lederle	0.625 mg X 28 tabs	300
		1.25 mg X 28 tabs	400
Conjugase	Elder	0.625 mg X 10 tabs	55
		0.625 mg X 28 tabs	200
Espauz	Glenmark	0.625 mg X 28 tabs	200
Estradiol			
E 2 Gel	Spectra (Sun)	5 tubes (3 g)	60
Estraderm TTS	Novartis	2 X 25 µg/patch	100
		2 X 50 µg/patch	125
		2 X 100 µg/patch	150
Estraderm MX	Novartis	6 X 0.75 mg patch	300
		6 X 1.5 mg patch	400
		6 X 3.0 mg patch	500
Systen 50	Johnson	2 X 3.2 mg patch	150
Estrofem	Novo Nordisk	28 X 2 mg 17β estradiol tabs	400
Sandrena gel	Infar	28 X 1 mg/g sac	650
ETS patch	Emcure	1.8 mg 17β estradiol patch	55

Patient Information Page

Dr Shalmi Mehta, Paediatric Endocrinologist, Ahmedabad

WHAT IS PUBERTY?

Puberty is the time of life when a child's body matures into an adult's. For girls, puberty can start as early as age 7½ years or as late as age 13. Their breasts begin to develop and their hips get wider. Girls start to grow underarm hair and pubic hair, and have a growth spurt. They start having menstrual periods about 2 to 3 years after their breasts start to develop. For boys, puberty usually starts between ages 9 and 14 years. The testicles and penis get larger. Boys start to grow underarm hair, pubic hair, and facial hair. Their voices deepen and they have a growth spurt. Boys' shoulders widen and they develop more muscle.

WHAT IS DELAYED PUBERTY?

Delayed puberty is when a teen goes through these body changes later than the usual age range.

For girls, it means no breast development by age 13 or no menstrual periods by age 16. For boys, it means no enlargement of the testicles by age 14.

WHAT CAUSES DELAYED PUBERTY?

Some teens are "late bloomers" who just happen to start puberty later than most children their age. Being a late bloomer is the most common cause of delayed puberty. It's not caused by a medical problem and usually doesn't need treatment. Late bloomers will eventually start puberty on their own and catch upto their friends.

LESS COMMON CAUSES OF DELAYED PUBERTY

1. Medical conditions that keep the intestines from absorbing nutrients from food, such as celiac disease orinflammatory bowel disease
2. Malnutrition (not getting proper nourishment) due to an eating disorder such as anorexia
3. Problems with the pituitary or thyroid glands, which make hormones that help children grow and develop
4. Problems with the ovaries or testicles, which make sex hormones
5. Genetic problems such as Turner syndrome in girls or Klinefelter syndrome in boys
6. Some cancer treatments that affect sex hormone production
7. Medicines that decrease appetite such as stimulants for Attention deficit hyperactivity syndrome.
8. Sometimes, girls don't start having periods because their uterus and vagina don't develop properly.
9. Or they may have too much of a hormone called prolactin, or a condition called polycystic ovary syndrome (PCOS).

DOES MY CHILD NEED TO SEE A DOCTOR IF HE/SHE HAS DELAYED PUBERTY?

Most likely, your child's delayed puberty won't need treatment. But if you or your teen are concerned about it, it's wise to see a doctor, especially if your child started to develop but then suddenly stopped. Your family doctor or pediatrician can tell you if your child should be checked for medical problems. Often, the only thing teens need is reassurance that they'll catch up to their peers.

HOW DOES A DOCTOR CHECK FOR DELAYED PUBERTY?

Your doctor will ask about your teen's health and medicines. The doctor will also want to know whether your child has noticed any signs of puberty or if there's a family history of delayed puberty. Your child will have a physical exam and also might have blood tests to check hormone levels. The doctor will check your child's growth by measuring height and weight, and doing an X-ray of the hand to see if his or her bones are developing more slowly than usual. Sometimes, a doctor can see signs of puberty that you or your teen might not have noticed. Some teens need a brain scan (such as an MRI) to check for problems with the pituitary gland. Girls might need a sonogram to see if their uterus and ovaries are developing as they should.

WHAT'S THE TREATMENT FOR DELAYED PUBERTY?

If your doctor doesn't find a medical problem, your teen probably doesn't need any treatment and will eventually start developing on his or her own. Your doctor may want to keep track of your child's progress toward puberty.

If your teen does have a medical problem, your doctor might refer you to a pediatric endocrinologist, an expert in growth and puberty. Sometimes, doctors will prescribe short-term hormone therapy to help teens start developing. Girls take estrogen pills or use skin patches; boys get testosterone injections. Some teens need long-term hormone therapy if they are not able to make normal amounts.

WHAT CAN I DO TO HELP MY CHILD COPE WITH DELAYED PUBERTY?

Seeing your child's pediatrician or family doctor to make sure nothing is wrong is the first step. If your child feels worried or depressed, consider counselling for him or her. Some teens need extra help to sort out their feelings.

QUESTIONS TO ASK TO YOUR DOCTOR.

1. Does my child have delayed puberty?
2. What's causing my child's delayed puberty?
3. Does my child need treatment for delayed puberty?
4. What are the options for treatment?
5. What are the risks and benefits of each treatment option?
6. How long will my child need treatment?

Endocrine meetings-Academic

From Mumbai

Dr. Premlata Varthakavi, T.N. Medical College & B.Y.L. Nair Hospital

The Department of Endocrinology, T.N. Medical College & B.Y.L. Nair Hospital, Mumbai, in collaboration with Indian Academy of Pediatrics, Mumbai Branch, organized a 2 day symposium titled "Growth disorders: Basics to Therapeutics" on 31st August & 1st September, 2013. Day 1 dealt with basic aspects and day 2 with therapeutic aspects. The programme included talks by esteemed faculty from all over the country- Dr. Vaman Khadilkar,Dr. Nalini Shah, Dr. Anurag Bajpai, Dr. V.P. Parveen, Dr. Archana Arya, Dr Rajesh Khadgawat, Dr. Bindu Kulshrestha, Dr. Ashwin Dalal, Dr. Shubha Phadke, Dr. Ravi Ramakantan, Dr Shilpa Sankhe and Dr. Simon Rajaratnam.

From Meerut

Growth Update by **Dr. Vijay Jaiswal,** LLRM Medical College, Meerut.

A Mini CME was organized by IAP Meerut and Dept of Pediatrics LLRM Medical College. Dr. Archana delivered a talk on growth monitoring and short stature. Session was chaired by Dr. Jaiswal and Prof. D.K.Sharma former HOD Pediatrics.

From Ahmedabad

Pediatric Endocrinology Update was held under the banner of Academy of Pediatrics, Gujarat at Ahmedabad. The main attractions were Growth and Diabetes workshop. The meet was attended by more than 120 pediatricians from across Gujarat. The faculties Dr. Vaman Khadilkar, **Dr. Shalmi Mehta** and Dr. Hemchand Prasad also talked about precocious puberty, thyroid disorders, ambiguous genitalia and obesity.

From Chennai

World Thyroid Day Celebration by **Dr. Hemchand,** Mehta Children's hospital, Chennai- The meet was held on 25th May consisting of a symposium on Juvenile Hypothyroidism. The chief guest was Dr. P.G. Sundarraman, Senior Consultant Pediatric Endocrinologist. It was well attended by the pediatricians and residents.

From New Delhi

The 3rd Delhi Pediatric Endocrinology Club Meeting was held at Ganga Ram Hospital on 23rd August. This meeting is held every 3 month at various institutions and is a forum where pediatricians and pediatric endocrinologists present and discuss interesting and difficult cases.

ENDOCRINE MEETINGS FOR PATIENTS

From Kanpur

- GROW India (Growth and Obesity workforce) was launched in May 2013 as a non governmental workforce to improve growth in children.

- Celiac disease meet – 54 children and their families were educated by Drs. Rashmi Kapoor, Yuthika Bajpai, Arun Khanduri and Anurag Bajpai about the various aspects of CD. The children were distributed a CD on " Celiac Disease aur Hum" a short educational film on CD.

- Growth Camp-Was organized by the Regency Hospital Kanpur. 250 children with growth disorders attended the camp and were educated about healthy life style and growth.

- Congenital hypothyroidism Support Group- In its first meeting, Drs. Yuthika, Rashmi Kapoor and Anurag Bajpai educated the parents about the long term impact of thyroid disorders in children. Free investigations and educational materials were provided.

- GROW India school initiative-The first teacher sensitization program was held at Purnchandra Vidyaniketan. Attended by over 100 teachers from 28 schools from the region. Drs. Rashmi Kapoor, Yuthika Bajpai, Samarth Vohra and Anurag Bajpai sensitized the teachers about growth and pubertal disorders and obesity. They were inducted as representatives of GROW India in different schools.

From Thiruvananthapuram

- Growth and Puberty check up camp (By **Dr.Veena Nair,** Ananthapuri hospitals and research institute, Thiruvananthapuram) - A growth and puberty check up camp was organised on 28th July 2013 as part of opening of the Pediatric Endocrinology Clinic. The aim was to screen for short stature, obesity and disorders of pubertal development. More than 100 children came with their parents to the camp. Dr Veena spoke on normal growth and pubertal changes in children and Dr Aneesh Ghosh spoke on childhood obesity.

Patient oriented activites-Diabetes

From Bangalore

Karnataka Institute of Diabetology (KID) organised aunique 'Education workshop and fun day for children with type 1 diabetes' on the 12th May 2013 at Bangalore.. Workshop saw 82 children with type 1 diabetes in attendance with their families. Dr.O.S. Santhosh, Consultant Paediatric Endocrinologist and Diabetologist, KID gave an insight about the basics, management and intricacies of type 1 diabetes. Vasavi Shabrish, Nutritionist, KID spoke about Nutrition in type 1 diabetes and Dr.H.S. Aditya Consultant Neuropsychiatrist and Director Manasa Neuropsychiatric Hospital, Bangalore spoke about the psychological aspects of the disorder.

From Coimbatore

A support group was conducted for for about 20 Type 1 and 2 Diabetes patients on 15th Aug, 2013 at Coimbatore by Dr. Meena Mohan. Emphasis was laid on good nutrition, healthy eating and the right choice of snacks.

From New Delhi

An interactive educational program for diabetic children was held by Dr. Archana Dayal Arya on 14th July which was attended by 50 families. The team included Dr. Arya along with a dietician, diabetes educator and a pediatric nephrologist.

From Ahmedabad

A residential camp was organized by the Juvenile Diabetes Parents Foundation at Ahmedabad . About 25 families stayed together for 2 days and had lot of fun filled activities. Dr. Shalmi Mehta discussed in depth about the various aspects of diabetes.

Academic Achievements

Congratulations

Dr. Harikumar on receiving the prestigious Shakuntala Amirchand Award of ICMR

14th ISPAD Science School- Dr. Sachin Mittal, Mumbai.

20 fellows from across the world participated in an intensive, absorbing week of scholarship 'down under' in Sydney. Dr.Sachin Mittal, Dr.Sunil Kota, Dr. Rajiv Vishwanath & Dr.V. Sri Nagesh represented India. Dr. Sachin Mittal won the 1st prize in the ISPAD quiz at the end of the course. The fellows discussed their current or planned research in these small groups and subsequently presented to the entire audience. The fellows were guided by eminent faculty members.

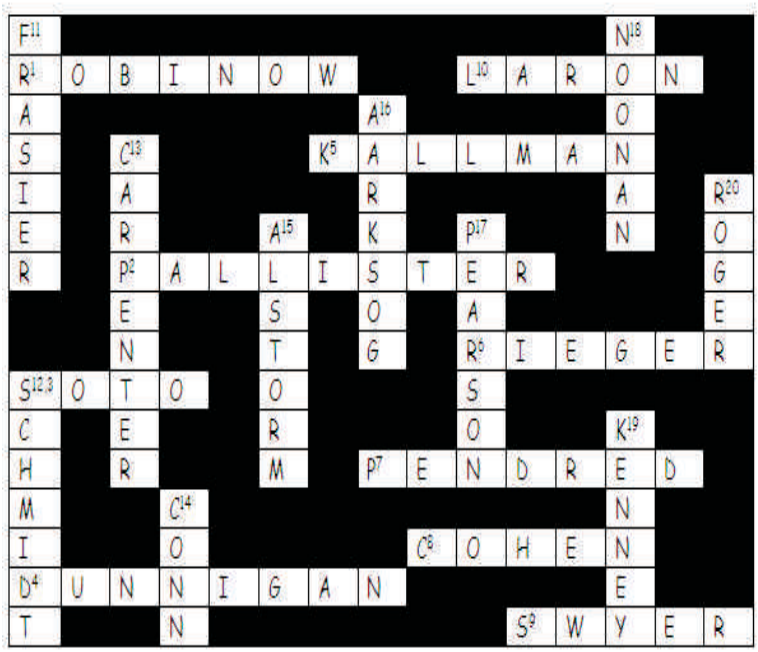
Plan your calendar…

Conference	Venue	Date
INTERNATIONAL MEETINGS		
ISPAD 2013	Gothenburg, Sweden	16-19th October 2013
IDF 2013	Melbourne , Australia	2-6th December 2013
PES 2014	Vancouver, Canada	3-6 May 2014
ENDO 2014	Chicago USA	21-24 June, 2014
ESPE 2014	Dublin, Ireland	18-21 September 2014
NATIONAL MEETINGS		
ESICON 2013	Bhopal, India	18-20 th October 2013
ISPAE 2013	Bengaluru , India	30th Nov - 2nd Dec 2013
PEDICON 2014	Indore, India	8-12 January 2014

FELLOWSHIP PROGRAM

A one- year Pediatric Endocrinology & Diabetes Fellowship program has been started at Sir Ganga Ram Hospital since 1st July 2013. under the auspices of GRIPMER (Ganga Ram Institute for Post Graduate Medical Education and Research).

Answer to Endocrine crossword



Genetic testing for short stature in AIIMS

Dr Vandana from AIIMS announced that they have started testing for mutations in SHOX, GHR and IGFALS genes in children (4-16 yr old) with Idiopathic Short Stature as a part of PhD thesis at Dept of Paediatrics. Patients with ISS can be referred to Room no 7 on Tues/Fri 9 AM and Mon 2 PM to Dr Vandana Jain for genetic testing.

Genetic testing for Neonatal Diabetes

Free Genetic testing for Neonatal Diabetes is available at Dr Mohan's Diabetes centre at Chennai. For details, please contact Dr Radha Venkatesan

(e-mail: radharv@yahoo.co.in or mathi.dale@gmail.com