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Pediatrics

EIGHT YEAR REVIEW OF PAEDIATRIC ENDOCRINE CASES SEEN IN EKITI STATE UNIVERSITY TEACHING HOSPITAL

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ABSTRACT Report on prevalence of Paediatric endocrine disorders is scarce especially in developing Countries. Ekiti State University Teaching Hospital (EKSUTH), Nigeria, established in the year 2008, is a young Tertiary health institution and base line data is needed to assess activities in the Paediatric endocrine Clinics. Paediatric endocrine cases seen between May 2009 and May 2017 were reviewed, analyzed and discussed. Five common endocrine disorders attended to are rickets (21.1%), disorder of puberty (17.5%), diabetes (15.8%), disorder of energy balance (12.3%) and disorder of sexual differentiation (5.3%).

KEYWORDS : Paefiatrics, endocrinology, Ekiti State, Nigeria.

INTRODUCTION

Paediatric endocrinology involves diagnosis and treatment of disorders of endocrine glands in children and adolescents. Paediatric endocrinology is rapidly evolving in the last few decades as a result of sub-specialization within the field and sponsored training of specialists in resource-poor countries.[1,2] Management of Paediatric endocrine conditions is capital-intensive; limiting prompt diagnosis and treatment in most cases especially in developing countries because of prevalent poverty and ignorance. Many children with endocrine disorders in developing countries are wrongly castigated as having spiritual problem and subjected to several untold psychological and physical molestations, thus preventing early presentation in Tertiary health centers where they could be assisted. Reports on endocrine disorders among children and adolescents are scanty from developing countries compared to developed countries.[3, 4] Resident doctors and Paediatric endocrinologist need to be acquainted with the common endocrine disorders in their areas of practice as compared to other climes for adequate preparation and response to the challenge.[2]

METHODOLOGY

Records of patients seen in Paediatric endocrinology clinic from May 2009 to May 2017 were reviewed and essential information like age at presentation, sex, diagnosis was extracted. Patients' data was entered and analyzed with SPSS version 20. Endocrine disorders seen were grouped into Diabetes (type 1 and 2), disorders of puberty, rickets, thyroid disorders, disorders of sexual differentiation, disorder of energy balance, physiological skeletal anomalies and others.

RESULTS

A total of 9,789 new Paediatrics cases were seen during the study period and 57 of these were Paediatric endocrine cases accounting for 0.58% of the total. Fifty-seven Paediatric endocrine patients were reviewed during the study period and of these rickets (21.1%), disorder of puberty (17.5%), and diabetes (15.8%) were the three commonest Paediatric endocrine disorders attended to (Table I). There were two cases (3.5%) of short stature secondary to hypothyroidism and Turner syndrome. The mean age of all the cases at presentation was 5.35 ± 4.85 years, and male to female ratio was 1:1. The number of Paediatric endocrine disorders seen during the study period steadily increased from 1 per year in 2009, 2010, 2011 and 2012 to 8, 7, 16, and 17 cases per year in 2013, 2014, 2015 and 2016 respectively (Figure 1)

DISCUSSION

Paediatric endocrine disorders accounts for 0.58% of all Paediatric cases seen at EKSUTH. Though not very common when compared to infectious disease, it demands attention of the health care professionals and policy makers because when diagnosed and treated early it improves the quality of life of affected children thereby impacting positively on the social and economic status of the family and country at large. The prevalence of 0.58% seen at EKSUTH is higher than 0.2% from Department of Paediatrics, University College Hospital (UCH)[5] Ibadan, Oyo State, Nigeria and lower than 0.72% reported from Department of Paediatrics, University of Benin Teaching Hospital (UBTH)[6], Edo State, Nigeria. A low prevalence from UCH could be explained by the fact that the report dated back to about four decades ago after which more Paediatric endocrinologists have been trained and people are becoming more aware about Paediatric endocrine disorders. Report from UBTH is a recent report; however, UBTH is an older institution with larger patient population than EKSUTH and the duration of study was longer.

Rickets (21.1%) was the commonest Paediatric endocrine disorder seen at EKSUTH during the study period. This is similar to the finding among Saudi Arabian children[1] but higher than the reported cases from UBTH, Edo State, Nigeria[6] and it was rightly explained that rickets in children were also managed by other Departments in UBTH like orthopedic surgery and family medicine. All the cases of rickets in the present study were Vitamin D dependent and associated with hypocalcaemia. They responded well to Vitamin D and calcium supplement. Age range at presentation was i-3.5 years and it was twice as common in boys compared to girls. One of the cases of rickets was picked accidentally while patient was on treatment for recurrent pneumonia. He responded well to Vitamin D and Calcium therapy and no longer had recurrent pneumonia. Nine children presented with bone deformities which looked like rickets initially but on closer evaluation, they had no clinical, radiological, or laboratory features of rickets and most of them straightened up spontaneously before the age of 5 years on follow up. These are the group classified as 'physiological skeletal anomalies'. Physiological skeletal anomalies that persisted beyond 5 years of age were referred to orthopedic surgeons for surgical correction.

Disorder of puberty (17.5%) was the second most common Paediatric endocrine cases in the index study. Of the 10 cases seen, isolated thelache (40%) was the most common followed by true precocious puberty (20%). There was also one rare case of amazia[7] (Table II). Financial constraint was a great limitation in comprehensive investigation and management of affected children and adolescents. Other disorders of puberty seen are enumerated in table II.

Diabetes mellitus (15.8%) was the third most common Paediatric endocrine disorder seen at EKSUTH. DM was reported as the commonest in the series from UBTH[6] and University of Port Harcourt Teaching Hospital, Nigeria[8] whereas it was third most common endocrine disorder in the present study. Seven (87.5%) of the Paediatric diabetic cases were type 1 DM while one was type 2 DM. This is similar to the pattern of Paediatrics DM from UBTH[6] with 15 cases of type 1 DM and two cases type 2 DM. All the type 1 DM patients in the present study presented in diabetic ketoacidosis (DKA) and were managed with insulin. The type 2 DM was diagnosed in a 12 year old female adolescent whose mother was also diabetic; diagnosis was established with normal level of serum C-peptide. She is doing well on oral hypoglycaemic agent, exercise and appropriate diet. It is worrisome that all our newly diagnosed type 1 DM patients presented

in DKA, which is a similar pattern in most developing countries[9,10] compared to some developed countries where less than 50% of their diabetic patients presented in DKA[11,12]. There is need for more public enlightenment on diabetes in children and routine screening of children and adolescents for diabetes. There are also great possibilities that many diabetic children and adolescents presenting in DKA in peripheral health centers not adequately staffed with clinicians skilled in diagnosing and managing childhood diabetes would have died from wrong diagnosis and treatment.

Disorder of energy balance (12.3%) was the fourth most common Paediatric endocrine disorder in the present study and about two-third of this was obesity caused by excessive calories. Other causes of obesity in the present study were iatrogenic Cushing syndrome and post-meningitic neurological disorder (table II). This finding is also similar to report from other centers[1,6]. Overweight and obesity is becoming a global problem among children and adolescents and there is need to curb this through health education, appropriate diet and exercise to prevent associated non-communicable diseases like type 2 DM and hypertension.[13]

Thyroid disorders are not very common among our patients compared to reports from other centers [1,6,7,14,15] despite the fact that Ekiti state is a mountainous State. This may be due to concerted effort by the Government and international organizations to reduce the prevalence of thyroid disorders through iodination of food product globally and education of susceptible communities. It is also possible there are missed cases of childhood thyroid disorders not presenting to the tertiary hospital.

Figure 1 graphically illustrates a steady increase in the number of Paediatric endocrine cases seen in our center during the study period.. This could be due to increasing awareness within and outside the center created through seminars for healthcare workers, health talk in schools and television on World Diabetes Day, coupled with training of resident doctors and nurses in growth monitoring and management of diabetes in children and adolescents. More effort is still needed to reach people in remote part of the State. There is also need for public-private partnership to make investigations and management of Paediatric endocrine disorders accessible, affordable and feasible.

CONCLUSION

Paediatric endocrinology is a rapidly developing and highly demanding sub-specialty in Paediatrics especially in developing countries. Rickets, disorder of puberty, diabetes and obesity are the four most common Paediatrics endocrine disorders seen at EKSUTH, Ekiti State, Southwest Nigeria.

Table I

Groups of Paediatrics endocrine disorders	Frequency (N)	Percent (%)	Age Range (years)	Male to Female ratio (M:F)
Diabetes Mellitus	9	15.8	5-16	0.8:1
Thyroid disorders	2	3.5	6-14	1:1
Rickets	12	21.1	1-3.5	2:1
Disorder of puberty	10	17.5	1.3-15	1:4
Disorders of sexual differentiation	3	5.3	0.01-0.08	?
Disorder of Energy balance	7	12.3	1-13	0.4:1
Physiological skeletal anomalies	9	15.8	1.4-4	3.5:1
Others	5	8.8	1-5	1:1.5
Total	57	100.0		

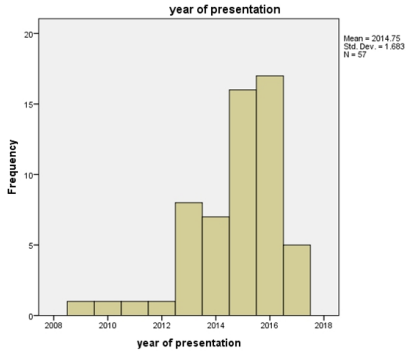

Figure 1: Frequency of Paediatric endocrine disorders seen from 2009 to 2017 at EKSUTH

Table II

Endocrine disorders	Frequency (N)	Age range (years)	Percent	Male : Female ratio
Diabetes Mellitus				
Type 1	8	5-16	14.04	1:1
Type 2	1	12	1.75	0:1
Thyroid disorders				
Hypothyroidism	1	14	1.75	1:0
Hyperthyroidism	1	6	1.75	0:1
Rickets	12	1-3.5	21.05	2:1
Disorder of Puberty				
Amazia	1	15	1.75	0:1
Gynaecomastia	1	15	1.75	1:0
Isolated thelache	4	1.5-4.9	7.02	0:4
Precocious puberty	2	4-8	3.51	0:2
Delayed puberty (Turner Syndrome)	1	15	1.75	0:1
Micropenis	1	9	1.75	1:0
Disorder of sexual differentiation				
Ambiguous genitalia	2	0.01-0.08	3.51	?
Hypospadias with bifid scrotum	1	0.06	1.75	1:0
Disorder of energy balance				
Obesity: nutritional	4	2-13	7.02	1:3
Obesity: post-meningitic	1	1	1.75	0:1
Obesity: iatrogenic Cushing syndrome	1	4	1.75	1:0
Marasmus: nutritional	1	1.5	1.75	0:1
Physiological skeletal anomaly				
Blount's disease	3	2-3.5	5.26	2:1
Physiological genu valgum	6	1.4-4	10.53	2:1
Others				
Down syndrome	3	3-3.5	5.26	1:2
Lypodystrophy	1	5	1.75	1:0
Achondroplasia	1	1	1.75	0:1
Total	57			

REFERENCES

1. N.A.M. Al Jurayyan. Spectrum of Endocrine disorders at the Paediatrics endocrine clinic, King Khalid University Hospital, Riyadh, Kingdom of Saudi Arabia. Journal of Taibah University Medical Sciences 2012; 7(2): 99-103
2. Bailey J.O. Paediatrics endocrinology. Clin Endocrinol Metab 1982;11: ix- xvi
3. Famuyiwa OO. Problems and challenges in the practice of endocrinology in a developing country– An overview. Nig Med Pract 1990;20(1):3-6.
4. Anochie IC, Azubuike JC. Endocrine and metabolic disorders. In: Azubuike JC, Nkangieneme KEO (editors). Paediatrics and Child Health in a Tropical Region. 2nd ed. Owerri, African Educational Services, 2007:666-683
5. Laditan AAO, Johnson AOK. Thyroid gland disorders in African children. J Natl Med Assoc 1979;71(2):139-141.
6. Onyiriuka A.N, Kouyate M. Paediatric endocrine disorders as seen at the University of Benin Teaching Hospital over a ten- year period. Niger J Paed 2014; 41(4): 316 -320
7. Oluwayemi IO, Agaja OT. Amazia: a rare anomaly in a resource poor setting. Current Pediatric Research 2016; 20 (2): 242-244
8. Anochie IC, Opara PI, Inimgba N. Pattern of endocrine diseases in children at the University of Port Harcourt Teaching Hospital. Port Harcourt Med J 2009;3:145-152
9. Akanji AO. Clinical experience with adolescent diabetes in a Nigerian Teaching Hospital. Natl Med Assoc 1996; 88:101-105
10. A.N. Onyieruka, E. Ifebi. Ketoacidosis at diagnosis of type 1 ddiabetes in children and adolescents: frequency and clinical characteristics. Journal of Diabetes & Metabolic Disorders 2013; 12:47
11. Habib HS. Frequency of ketoacidosis in newly diagnosed type 1 diabetes mellitus in Northwest Saudi Arabia. Saudi Med J 2005; 26 (12):1936-1939
12. Abdul-Rasoul M, Al-Mahdl M, Al-Quttan H, Al- Tarkait N, Alhkouly M, Al-Safi R, Al-Shawaf F, Mahmoud H. Ketoacidosis at presentation of type 1 diabetes in children in Kuwait: frequency and clinical characteristics. Pediatr Diabetes 2010; 11(5): 351-356
13. Oluwayemi I.O, Oluwayemi M.A. Relationship between Obesity and Fasting Blood Glucose among Secondary School Adolescents in Ado-Ekiti, South West Nigeria. International Journal of Healthcare Sciences 2015; 3(1): 80-85.
14. Ogbera AO, Fasanmade O, Adediran O. Pattern of thyroid disorders in the south western region of Nigeria. Ethn Dis 2007;17:327-330.
15. Edino ST, Mohammed AZ, Ochicha O. Thyroid gland diseases in Kano. Niger Postgrad Med J 2004;11:103-106.