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Research Article

Study of Puberty Menorrhagia in Inpatient Admissions

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Abstract: Abnormal uterine bleeding accounts for approximately 50% of the visits of adolescent girls to gynaecologists. These complaints encompass disorders ranging from minimal spotting to profuse bleeding and affect the quality of life in a majority of affected women. The aim of the study was to evaluate the incidence, clinical presentation, etiological factors and treatment outcomes of the inpatients suffering from puberty menorrhagia. This study was a retrospective analysis of 16 patients presenting with puberty menorrhagia requiring inpatient admission to Gynaecology ward, Cheluvamba hospital, Mysore during the period January 2012 to September 2013. There were 16 patients of puberty menorrhagia requiring admission. Most of the patients were in the age group of 14-16 yrs (62.5%). In majority of the patients the duration of symptoms was between 3-6months (37.5%). In the present study anovulation was the cause in 68.7% of cases. In the present study hypothyroidsm was present in 3 cases (18.7%). In the present study 12.5% patients had PCOD. No case of coagulation disorders and genital tuberculosis was seen. Out of the 16 patients 6 patients responded to treatment with normal menstrual flow at the end of 3 months and 7 patients required further treatment for 6 months. 3 cases were lost to follow up. Immaturity of the hypothalamic - pituitary ovarian axis resulting in anovulation remains the commonest cause of puberty menorrhagia. Approximately 20% of adolescents have an underlying endocrine or haematological disorder requiring targeted evaluation and treatment.
Keywords: Puberty menorrhagia, Anovulation, Hypothyroidism, PCOS.

INTRODUCTION

Puberty menorrhagia is defined as excessive bleeding in amount (>80ml) or in duration (>7days) between menarche and 19 years of age [1]. Puberty is the period during which secondary sexual characteristics develop and the capability of sexual reproduction is attained. Five important physical changes are evident during puberty-breast growth, pubic hair growth, axillary hair growth, increase in height and menstruation. The onset of menstruation is influenced by a number of factors: genetics, nutrition, body weight and maturation of the hypothalamic pituitary ovarian axis [2]. The onset of menstruation does not mean the occurrence of ovulation; in the majority early menstrual cycles are anovulatory [3]. The common causes were anovulatory cycles, coagulation disorders, platelet function disorders, hypothyroidism, polycystic ovarian syndrome, genital tuberculosis, pelvic tumours [4, 5].

Anemia is potential sequelae of puberty menorrhagia [6]. Therefore, it is imperative to establish the correct diagnosis before any therapy is administered [7].

This study was conducted to determine the various etiological factors of puberty menorrhagia and its management.

MATERIALS AND METHODS

This study was a retrospective analysis of 16 patients presenting with puberty menorrhagia requiring inpatient admission to Gynaecology ward, Cheluvamba hospital, Mysore during the period January 2012 to September 2013. Data was collected from the medical records of these patients. Each patient's record was analysed for demographic profile, duration and severity of symptoms, age of menarche, medical history including recent weight change, tuberculosis, thyroid disorders and haematological disorders. Personal history of any drug intake was noted. Family history of tuberculosis, bleeding diathesis and thyroid disorders were noted. Examination findings, requirement for blood, component therapy and response to treatment were also noted. Investigations included exclusion of pregnancy, complete blood count, peripheral smear, blood grouping and typing, coagulation profile, thyroid function tests and transabdominal ultrasonography. Further investigations like hormonal assays (LH, FSH, S. Prolactin) were carried out in select cases.

Prostaglandin synthetase inhibitors like mefenamic acid and antifibrinolytic agents like tranexemic acid were used as first line therapy. Hormones (COC's, progestins) were used in those not responding to first line therapy. Anemia was corrected with blood transfusion or parenteral iron therapy. Specific treatment for correction of hematological disease and thyroid disease was carried out.

RESULTS

There were 16 patients of puberty menorrhagia requiring admission. Most of the patients were in the age group of 14-16yrs (62.5%). In majority of the patients the duration of symptoms was between 3-6months (37.5%). In two patients it was the first episode of menorrhagia that was severe enough to warrant admission.

Table 1: Age distribution

Age (Years)	Number	Percentage
<14	2	12.5
14-16	10	62.5
>16	4	25
Total	16	100

Table 2: Duration of symptoms

Duration	Number	Percentage
First episode	2	12.5
3- 6months	6	37.5
6-12months	4	25
>1year	4	25

Table 3: Hemoglobin distribution

Hemoglobin(gm/dl)	Number	Percentage
<4	01	6.25
4-6	10	62.5
6-8	05	31.25

Table 4: Hormonal management

Hormones used	Number	Percentage
COC	11	68.7
Progesterones	5	31.2

Table 5: Etiology

Etiology	Number	Percentage
Anovulatory cycles	11	68.7
Hypothyroidsm	3	18.7
PCOS	2	12.5

Table 6: Associated treatment

Treatment given along with hormones	Number
Tranexemc acid	16
Hematinics	10
Blood transfusion	14
Thyroxine	3

Out of the 16 patients 6 patients responded to treatment with normal menstrual flow at the end of 3 months and 7 patients required further treatment for 6 months. 3 cases were lost to follow up.

DISCUSSION

In the present study anovulation was the cause in 68.7% of cases. Anovulation was the cause in 50-74% of patients requiring admission as reported in literature [4, 5]. Incidence of anovulatary DUB in adolescent menorrhagia varied from 69.5-74% in Indian literature [8, 9]. During puberty, increase in the frequency and amplitude of pulsatile GnRH, that initiates and regulates secretion of pituitary gonadotropins [10]. However, during initial years after menarche due to lack of maturity of hypothalamo-pituitary-ovarian axis immature timing of LH pulse as well as increase basal levels of LH results in anovulatory cycles. In such cycles levels of FSH and LH are sufficient to induce follicular development and

estrogen secretion but inadequate to induce follicular maturation and ovulation. Unopposed estrogen stimulates endometrial growth that outgrows its blood supply and architectural support, resulting in partial breakdown and irregular shedding [10]. In normal menstruation the ratio of PGF2a:PGE2 is 2:1 so that it is the vasoconstrictor and platelet aggregator action that predominates. In anovulatory DUB the lack of progesterone results in decrease in this ratio which accounts for the increased mean menstrual blood loss. It also accounts for painless period's characteristic of anovulatory cycles.

In this study treatment included control of active bleeding with tranexemic acid and hormones. Initially high dose of norethisterone 20-30 mg in divided doses was used for 24-48 hours for initial control of bleeding then tapered gradually to 5mg daily for 21 days. Control of heavy bleeding by high doses of progesterones is called medical curettage. Following withdrawal bleeding 11 patients received OCP's for 3-6 months for regularization of the cycles. The rest received Norethisterone 5mg daily from D5-D25.

Acquired and congenital bleeding disorders are the second most common cause of menorrhagia in adolescents. Claessens and Cowell [4] in their study, found that the etiology of menorrhagia was 75% DUB, 19% bleeding diathesis and 7% had other pathology. As this study was limited to a small group of patients over a small time period we did not see any cases of bleeding diathesis.

The reported incidence of subjective menorrhagia in myxoedema varies from 32-80% and menorrhagia may not infrequently be the presenting complaint [11]. Sanjay Rao *et al*. observed 5.7% in his study [12]. In the present study hypothyroidsm was present in 3 cases(18.7%).The menorrhagia associated with hypothyroidism responds promptly to the thyroid replacements, often in doses insufficient to correct the other manifestations of the condition. This suggests that thyroxine does have a direct effect on the spiral arterioles and on haemostasis at menstruation. In the present study hypothyroid patients were initially managed with progesterones and thyroxine replacement was started concomitantly. All of them responded well to thyroxine replacement.

In the present study 12.5% patients had PCOD. Albert Altcheck *et al*. in his study showed 25% patients with persistent DUB manifested as PCOD [13]. Sanjay Rao *et al*. observed 2.8% patients having PCOD [12]. The goal in PCOS amongst adolescence is to regulate menstruation and reduce androgenic effects. OCP's are preferred modality of treatment as they not only inhibit LH but also decrease the circulating testosterone by increasing the Sex hormone binding globulin.

Although no cases of genital tuberculosis were seen in the present study, tuberculosis accounts for significant menstrual problems in India [14]. Menorrhagia or irregular bleeding in genital TB is probably due to ovarian involvement, pelvic congestion or endometrial lesions.

CONCLUSION

Immaturity of the hypothalamic - pituitary ovarian axis resulting in anovulation remains the commonest cause of puberty menorrhagia. Approximately 20% of adolescents have an underlying endocrine or haematological disorder requiring targeted evaluation and treatment. Reassurance, counselling, correction of anemia and correcting nutritional status will play an important role in management of puberty menorrhagia.

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