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Research Article

# Dysfunctional uterine bleeding in Teenager

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**Abstract**

**Background**: ''Dysfunctional uterine bleeding'' is the term applied to the abnormal bleeding patterns that occurce in women secondary to anovulation or oligo-ovulation and is often referred to as inoculators bleeding. Exclusion of anatomic pathology and medical illness is important before applying this classification. it is one of the most common complaint that gynecologists and primary care physicians confront in their office practice. Bleeding is noncyclic in nature and can range from light to excessive in volume. Dysfunctional bleeding can be in almost all cases treated medically by reversing the endometrial abnormalities that lead to heavy and prolonged menstrual flow and subsequently restore cycle predictability and regularity .**Objective**: Evaluation of dysfunctional uterine bleeding in teenager , **Patients and methods:** This study was conducted in the department of obstetrics and gynecology of Al-Zahra University Hospital (Assiut ) Egypt, as a prospective randomized study that evaluate of uterine bleeding in teenage in (600)females complaining of abnormal uterine bleeding. **Results:** Dysfunctional uterine bleeding as causes of abnormal uterine bleeding There was statistically significant in teenager (group A) 62.3% VS 12,3"% in (group B). irregular menstruation represents 79.7%. spasmodic dysmenorrhea represent 25.7%.The pattern of menstruation was51.9%oligomenorrhea,5.3%polymenorhea,6.4%hypomenorhea, 9.6%menorrhagia. **Conclusion** Bleeding in the teenage years usually has no organic causes; however, a careful examination of organic causes is necessary before the diagnosis of dysfunctional uterine bleeding is made.

**Keywords:** uterine bleeding -Teenage, uterine bleeding in - non-teenage, spasmodic dysmenorrhea, complete cure

## Introduction

Dysfunctional uterine bleeding (DUB) it is abnormal bleeding in any type of menstrual disorder in the absence of any structural condition or underlying disease. For this reason, this condition is considered as an exclusionary diagnosis. In adolescence its prevalence is ~20%, The main mechanism involved is anovulation, which is due to immaturity of the hypothalamic-pituitary-gonadal axis ( Deligeoroglou and Tsimaris., 2010).

Many adolescents may report "irregular" periods for 2 to 3 years after menarche due to anovulatory cycles and an immature Hypothalamic-Pituitary-Ovarian axis (Gray and Emans.,2007).

Once a "regular" menstruating pattern is established the cycle is characterized by periodicity and ranges between 21 and 40 days, with bleeding usually lasting 2 to 7 days and an average blood loss of 20 to 80 mL (Mitan and Slap .,2009).

To establish that a patient has DUB or other causes of menstrual disorders must be excluded. One of the main causes is the alteration of coagulation; about 40% of cases of metrorrhagia or menometrorrhagia are due to von Willebrand disease or platelet disorders. In these patients, a history of bleeding at other sites helped to establish the diagnosis in ~80% of cases. For this reason part of the evaluation of any adolescent with menstrual disorders is to order a complete blood

count (including platelet count and coagulation times**)** ( Venkateswaran and Yee., 2010).

It is also necessary to consider among the differential diagnoses complications of pregnancy such as abortion or ectopic pregnancy. As part of the laboratory studies immunological pregnancy tests should be included. Endocrine disorders such as thyroid problems, polycystic ovarian syndrome (POS) or adrenal gland disorders should also be ruled out. Therefore, it is necessary to determine the concentrations of LH and FSH, thyroid hormone status, prolactin, testosterone and dehydroepiandrosterone sulfate (DHEAS) ( Deligeoroglou and Tsimaris., 2010).

## Patients and Methods

This study was conducted in the department of obstetrics and gynecology of Al-Azhar University Hospital (Assiut ) Egypt as a prospective randomized controlled study that compares the DUB of teenage. A specially designed questionnaire was prepared for this purpose , and data was collected from(600) females complaining of abnormal uterine bleeding selected from those patients attending to our gynecology clinic:

group A : included (187) females of teenage (13-19) years with dysfunctional uterine bleeding .

group B: included (37) females of (19-40) years with dysfunctional uterine bleeding.

**Inclusion criteria:**

1. Age: 13 – 19 years for Group A, and 19- 40years for Group B.
2. medical problem free such as: diabetes mellitus (DM), hypertension (HTN) , bronchial Asthma, Women receiving treatments as glucocorticoids ,tamoxifen ,anticoagulants , Anti psychotics and Platelet inhibitors.
3. Patients have no special habits of medical importance like Drug abuse, alcoholic, and smoking.
4. with good mental state .

**Exclusion criteria:**

1. age: less than 13 years or more than 40 years.
2. women with known medical problem such as diabetes mellitus (DM), hypertension (HTN) or bronchial asthma …. etc.
3. Pregnancy and its complication (early bleeding ,ante partum hemorrhage. post partum hemorrhage, Ectopic pregnancy, Retained products of conception ,Threatened, spontaneous or missed Abortion).

**Results**

During this study (600) females complaining of abnormal uterine bleeding in our gynecology clinic at Al Azhar University Hospital: Dysfunctional uterine bleeding as causes of abnormal uterine bleeding was statistically significant in teenager (group A)187 (62.3%) VS 37(12,3"%) in (group B) . Menstruation Pattern, irregular in teenage represents 149 (79.7%) vs. 16 (43.2%) in group B. spasmodic dysmenorrhea in teenage represent48 (25.7%) vs. 6(16.2%) in (group B) .187(100%) normal FSH/LH ratio in teenager and 187 (100%) normal ultrasonography of uterus and 187 (100%) normal ultrasonography of ovary , while 37 (100%) normal FSH/LH ratio in group B (19-40yrs) and 37 (100%) normal ultrasonography and37 (100%) normal ultrasonography of ovary. type of abnormal bleeding in teenage was 97( 51.9%)oligomenorrhea, 10(5.3%)polymenorhea, 12(6.4%) hypomenorhea, 18(9.6%)menorrhagia .

**Discussion**

Adolescence is a time when a young girl matures from an irresponsible child to a responsible adult. This maturation is not only biological but psychological and sociological. A girl should be given both medical and psychological education and support during those early years of menstruation. Medical staff specializing in adolescent gynecology must work with the adolescents individually because of the difference in the anatomy and the psychology of these patients compared to those of adults. Lusher JM Because adolescence is a time when a young girl so concentrates on her appearance, DUB is not only a medical problem but may also negatively affect the young girl psychologically. It is also a major concern for the family (Lusher JM.1996).

In our study DUB affects about 62.3% of the menstruating women in teenager. The majority of DUB cases occur in the 5 to 10 years of

**Table (1):** Sociodemographic characteristics of study groups.

| | **Group A (n= 187)** | | **Group B (n= 37)** | | **P-value** |
|---|---|---|---|---|---|
| | **No.** | **%** | **No.** | **%** | |
| **Age:** | | | | | 0.001 |
| Range (years) | 13 – 19 | | 19 – 40 | | |
| Mean ± SD (years) | 15.3±2.1 | | 28.4±2.7 | | |
| **Residence:** | | | | | |
| Rural | 103 | 55.1 | 23 | 62.2 | 0.450 |
| Urban | 84 | 44.9 | 14 | 37.8 | 0.451 |
| **Social class:** | | | | | |
| Low | 32 | 17.1 | 12 | 32.4 | 0.055 |
| Middle | 85 | 45.5 | 15 | 40.5 | 0.712 |
| High | 70 | 37.4 | 10 | 27.0 | 0.308 |
| **Age of menarche** | | | | | |
| 13 | 21 | 11.2 | 7 | 18.9 | 0.307 |
| 14 | 30 | 16.0 | 12 | 32.4 | 0.035 |
| 15 | 50 | 26.7 | 10 | 27.0 | 0.867 |
| 16 | 86 | 46.0 | 8 | 21.6 | 0.010 |
| **Marital state:** | | | | | |
| Married | 48 | 25.7 | 23 | 89.2 | 0.001 |
| Virgins | 139 | 74.3 | 4 | 10.8 | 0.001 |
| **menstrual pattern** | | | | | |
| Regular | 38 | 20.3 | 21 | 56.8 | 0.001 |
| Irregular | 149 | 79.7 | 16 | 43.2 | 0.001 |

P <0.05 significant difference, p<0.01 highly significant difference, p>0.05 no significant difference**.**
This table show high statistical significance difference between group A and group B as regard to sociodemographic with regularity of menstruation and marietal state.

**Table (2):** Comparison between both groups regarding dysmenorhea.

| | **Group A (n= 187)** | | **Group B (n= 37)** | | **P-value** |
|---|---|---|---|---|---|
| | | | | | |
| **Spasmodic dysmenorhea** | | | | | |
| **Positive** | 48 | 25.7 | 6 | 16.2 | 0.308 |
| **Negative** | 139 | 74.3 | 31 | 83.8 | 0.310 |
| **Congestive dysmenorhea** | | | | | |
| **Positive** | 8 | 4.3 | 12 | 32.4 | 0.001 |
| **Negative** | 178 | 95.2 | 25 | 67.6 | 0.001 |

P <0.05 significant difference, p<0.01 highly significant difference, p>0.05 no significant difference**.**
This table show highly statistical significance difference between group A and group B as regard congestive dysmenorhea .

**Table (3):** Comparison between both groups regarding risk factors and causes of abnormal uterine bleeding.

| | Patient's group (n= 300) | | Control (n= 300) | | P-value |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| **DUB** | 187 | 62.3 | 37 | 12.3 | 0.001 |
| **Systemic illness (Hepatic and Renal problem)** | 1 | 0.3 | 2 | 0.7 | 0.369 |
| **Tumors and cyst** | 12 | 4.0 | 66 | 22.0 | 0.001 |
| **Trauma (direct or by device)** | 3 | 1.0 | 4 | 1.3 | 0.998 |
| **PID** | 15 | 5.0 | 36 | 12.0 | 0.003 |
| **Hematology (platelet and coagulation defect)** | 46 | 15.3 | 68 | 22.7 | 0.028 |
| **Thyroid disorder (Hypothyroidism or Hyperthyroidism)** | 8 | 2.7 | 10 | 3.3 | 0.811 |
| **PCO** | 8 | 2.7 | 13 | 4.3 | 0.374 |
| **Hyperprolactenmia** | 8 | 2.7 | 20 | 6.7 | 0.033 |
| **Contraceptive (hormonal)** | 3 | 1.0 | 36 | 12.0 | 0.001 |
| **Psychological disturbance** | 6 | 2.0 | 4 | 1.3 | 0.749 |
| **Sever anemia (>7mg/dl)** | 3 | 1.0 | 4 | 1.3 | 0.999 |

P <0.05 significant difference, p<0.01 highly significant difference, p>0.05 no significant difference**.**
This table show high statistical significance difference between group A and group B as regard to risk factors with DUB,PID and contraceptive .

(**Table (4):** Comparison between both groups regarding type of uterine bleeding .

| | Group A (n= 187) | | Group B (n= 37) | | P-value |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| Oligomenorrhea | 97 | 51.9 | 10 | 27.0 | 0.009 |
| Polymenorrhea | 10 | 5.3 | 9 | 24.3 | 0.001 |
| hypo menorrhea. | 12 | 6.4 | 5 | 13.5 | 0.250 |
| Menorrhagia | 18 | 9.6 | 13 | 35.1 | 0.001 |

P <0.05 significant difference, p<0.01 highly significant difference, p>0.05 no significant difference.
This table show high statistical significance difference between group A and group B as regard to pattern of menstruation with oligomenorrhea and polymenorrhea **.**

**Table (5):** Comparison between both groups regarding course of treatment of DUB.

| | Patient's group (n= 187 | | Control (n= 37) | | P-value[1] |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| **Complete course of treatment** | 174 | 93.0 | 31 | 83.8 | $0.127^{Ns}$ |
| **Incomplete course treatment** | 4 | 2.1 | 4 | 10.8 | 0.034* |
| **Refused of treatment** | 9 | 4.8 | 2 | 5.4 | $0.791^{Ns}$ |

P <0.05 significant difference, p<0.01 highly significant difference, p>0.05 no significant difference.This table show no statistical significance difference between group A and group B as regard to course of treatment.

**Table (6):** Comparison between both groups regarding mode of treatment DUB.

| | Patient's group (n= 174) | | Control (n= 31) | | P-value[1] |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| **Hormonal** | 38 | 21.8 | 16 | 51.6 | 0.001 |
| **Haemostatic and Hormonal** | 76 | 43.7 | 13 | 41.9 | 0.986 |
| **No medical treatment (Follow up)** | 60 | 34.5 | 2 | 6.5 | 0.004 |
| **cure by treatment** | | | | | |
| **Complete cure** | 169 | 97.1 | 26 | 83.9 | 0.007 |
| **Incomplete cure** | 5 | 2.9 | 5 | 16.1 | 0.006 |

P <0.05 significant difference, p<0.01 highly significant difference, p>0.05 no significant difference.
This table show high statistical significance difference between group A and group B as regard to cure by treatment**.**

premenopause or post menarche, when the ovaries are in an unstable responsive state ,Although DUB is a common problem in adolescence there is no well organized investigation that can enable us to estimate the percentage of adolescent girls in need of medical treatment for the pathology. Widholm's study Read G of 5,000 adolescents reported that 43% had irregular periods during their first year of menstruation, and 20% continued to report irregular menstruation 5 years after menarche. (Read G, Wilson D, Hughes I, Griffiths K. 1984).

There are high significant differences between tow groups regard to age and menstruation pattern in teenager (irregular cycle represent 79,7%),dysmenorrhea (spasmodic and congestive 30%) which unlike findings were found by Demir SC The mean age of the students was 15.8 years; their menarche age was 12.9 years. Irregular periods were observed in 26.7% of the cases, 62.2% had at least one irregular bleeding in their lives, 11.3% visited a gynecologist for irregular bleeding, and 4.5% were treated for it. Dysmenorrhea occurred in 38.7% of the students (Demir SC, Kadayýfçý TO, Vardar MA, Atay Y 2000.)

Another important menstrual disorder in adolescence is dysmenorrhea defined as pain experienced during or immediately before menstruation ( in teenager spasmodic represent 25.7%). In the pathogenesis of dysmenorrhea, prostaglandins and arachidonic acid metabolites play an important role Fraser IS Warner P, Marantos PA. (2001). In a study in Sweden up to 72% of adolescent girls reported dysmenorrhea and 38% of them reported impairment of daily activity during these painful episode ( Higham JM, O'Brien PMS, Shaw RW1990). Dysmenorrhea becomes a more common occurrence as the girl advances through adolescence. Klein and Litt's study showed that compared with 39% of 12-year-old American girls, 72% of 17-year-old young women complained of menstrual pain ( Manucci PM 1997).

In our study not all case start by medical treatment similar finding well be found with Farquhar C (just follow up) according to Cochrane systematic review (2009), there is insufficient evidence to establish the effectiveness of the oral contraceptive pill compared with other medical therapies, placebo, or no therapy for the treatment of heavy menstrual bleeding (Farquhar and Brown 2009).

In our study we used Tranexamic acid as medical treatment similar finding well be found with Lethaby A, Tranexamic acid a medication commonly used in Europe, can be used for menorrhagia and acts as an antifibrinolytic agent. It seems to work better than NSAIDs, but large doses are required and side effects are common (Lethaby A, Farquar C, Cooke I 2000).

In our study we used Progestin therapy as medical treatment similar finding well be found with Ely JW, ACOG recommends treatment with combination oral contraceptives or cyclic progestin. Progestin therapy and oral contraceptives induce routine withdrawal bleeding and correct any related excessive menstrual bleeding. Oral contraceptives containing 35 mcg or less of ethinyl estradiol are preferred.

Cyclic oral medroxyprogesterone acetate (Provera) at a dosage of 10 mg per day for 10 to 14 days per month also is effective (Ely JW, Kennedy CM, Clark EC, Bowdler NC 2006).

## Conclusion

Bleeding in the teenage years usually has no organic causes; however a careful examination of organic causes is necessary before the diagnosis of dysfunctional uterine bleeding is made. DUB is a common cause for concern among adolescents and their families, as well as a frequent cause of visits to the Emergency Department and/ or health care provider. In about 95% of cases it is caused by the late maturation of the HPO axis, leading to anovulatory cycles. The diagnosis of DUB is made primarily by exclusion and the list of diagnoses to be considered in approaching the problem of abnormal vaginal bleeding in the adolescent is long. A thorough medical history followed by complete physical examination and the appropriate laboratory investigations is of great importance

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