

# Secondary Amenorrhea: An Approach to Diagnosis and Management

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**Abstract:** ***Background:** Amenorrhea is common presenting complain in large number of gynaecological disorders. Secondary amenorrhea is clinically defined as the absence of menstruation for more than 3 cycle intervals, or 6 consecutive months, in previously menstruating woman. Approximately 1% of women of reproductive age experience secondary amenorrhea. **Objective:** To investigate the cause of secondary amenorrhea in different age group and management. **Methods:** The study group includes 100 women with secondary amenorrhea who attended OPD or were admitted in AIIMS Patna during the period of March 2017 to May 2018. This is observational study of women who had amenorrhea for more than 6 months. **Results:** Our study showed that 30% had PCOD, premature ovarian failure seen in 15% of cases, genital tuberculosis seen in 15% of cases. Study showed that 56% were in age group of 18-29 years and 44% were in age group 30-39 years. Majority of patients (58%) had duration of amenorrhea <1 year. Hyperprolactinemia seen in 10% of cases and hypothyroidism in 6%. **Conclusion:** Amenorrhea is a common presentation in reproductive period. The most common causes are PCOD, hypothalamic amenorrhea, ovarian failure, hyperprolactinemia.*

**Keywords:** Secondary amenorrhea, Hyperprolactinemia, PCOD.

## 1. Introduction

Amenorrhea is the absence of menstruation. Secondary amenorrhea is characterized as the cessation of previously regular menses for three months or previously irregular menses for six months (1-2). The incidence of secondary amenorrhea can be quite variability from 3% in the general population to 100% under condition of extreme physical or emotional stress. Pregnancy is the most common cause of amenorrhea and must be considered in every patients presenting for evaluation of amenorrhea (1,2,3,4). Secondary amenorrhea can occur due to natural changes in the body and the most common causes are pregnancy followed by breastfeeding and menopause.

Women who take birth pills or who receive hormone such as Depo-Provera may not have monthly bleeding. When they stop taking these hormones, their periods may not return for more than 6 months.

The most common causes are PCOD, premature ovarian failure, hypothalamic amenorrhea, hyperprolactinemia, hypothyroidism and drug induced (1,5).

## 2. Materials and Methods

The study group included 100 women with secondary amenorrhea who attend OPD or were admitted. This observational study carried out in AIIMS Patna during period of March 2017 to May 2018. The study included the age group between 18 years to 39 years. Proper detailed history were taken from all patients like age of menarche, menstrual history, drug intake, family history, galactorrhea, weight gain, hirsutism. General examination, abdominal examination and pelvic examination (indicated) were done. Subsequently the patients were subjected to routine as well as relevant diagnostic investigations.

## Exclusion Criteria

The patients with secondary amenorrhea due to physiological cause like pregnancy, lactational amenorrhea were not included in the study.

Refusal for participation in study.

## 3. Results

In present study 100 patients were studied. The minimum age of presentation was 18 years and maximum age was 39 years. 56% were in age group of 18-29 years and 44% were in age group 30-39 years. Majority of the patients (58%) had duration of amenorrhea < 1 year, 42% had period of amenorrhea > 1 year (Table 1).

**Table 1:** Shows age of presentation and duration of amenorrhea

|                        |             |     |
|------------------------|-------------|-----|
| Age of presentation    | 18-29 years | 56% |
|                        | 30-39 years | 44% |
| Duration of amenorrhea | <1 year     | 58% |
|                        | >1 year     | 42% |

The most common causes of secondary amenorrhea were PCOD (30%), Genital tuberculosis (15%), POF (15%), hyperprolactinemia (10%). Others causes were hypothyroid (6%), Asherman (7%), and hypergonadotropic (4%), drug induced (6%). Sheehan's syndrome seen in 2% of cases, where bony chip seen in 2%. (Table 2). In one case no cause was found.

**Table 2:** Shows causes of amenorrhea

| Causes               | Number of cases | Percentage |
|----------------------|-----------------|------------|
| PCOD                 | 30              | 30%        |
| Ovarian failure      | 15              | 15%        |
| Genital tuberculosis | 15              | 15%        |
| Hyperprolactinemia   | 10              | 10%        |
| Hypothyroidism       | 06              | 06%        |
| Asherman             | 07              | 07%        |
| Hypergonadotropic    | 04              | 04%        |

|                  |    |     |
|------------------|----|-----|
| Drug induced     | 06 | 06% |
| Sheehan          | 02 | 02% |
| Weight loss      | 02 | 02% |
| Foreign body     | 02 | 02% |
| Unknown etiology | 01 | 01  |

**Table 3:** Shows the results of Challenge test

|  |                        |    |       |
|--|------------------------|----|-------|
| Progesterone challenge test                | Withdrawal bleeding    | 80 | 80%   |
|  | No withdrawal bleeding | 20 | 20%   |
| Estrogen+progesterone Challenge test (E+P) | Withdrawal bleeding    | 10 | 74.2% |
|  | No withdrawal          | 5  | 27.8% |

After negative pregnancy test, progesterone challenge test had given to all patients, out of which 80% had withdrawal bleeding. Only 20% had no withdrawal bleeding. Patients with negative progesterone challenge test were subjected to E+P challenge test. Out of 20, 10 patients had withdrawal bleeding and 5 patients had no withdrawal bleeding. (Table 3). Three patients diagnosed with Asherman syndrome, 2 patients had tuberculosis and in one case no diagnosis made.

### Management

The treatment for amenorrhea depends on the underlying causes as well as health status and goal of the individual. In PCOD patients should be strongly encouraged to maintain BMI < 24, including life style medication and regular exercise. If pregnancy is not desired monthly withdrawal bleeding (cyclic progesterone & OCP) should be included. Metformin is presently offered to improve ovulation (6).

ATT should be given for 6 months in case of TB, thyroxine is the treatment of patients with hypothyroidism.

Dopamine agonists are effective in treating hyperprolactinemia.

Premature ovarian failure occurs in 1% of women. Treatment should be decided on an individual basis. Some patients may require oestrogen replacement therapy for hot flashes and to prevent osteopenia.

In Asherman syndrome hysteroscopic adhesiolysis with post procedure oestrogen stimulation of endometrium. Hysteroscopic removal of bony chip in foreign body.

## 4. Discussion

Incidence of secondary amenorrhea are approximately 5-7% of menstruating women in the US. No evidence indicates that the prevalence of amenorrhea varies according to national origin or ethnic group. However, local environmental factors related to nutrition and the prevalence of chronic disease undoubtedly have an effect. Recently an increase in the prevalence of nutrition related was reported perhaps due to sociocultural influences that focus on body image weight in young women (4).

In our study majority (56%) of women were between 18-29 age group and most of them had amenorrhea for the period of < 1 year. Our study showed that the most common causes of secondary amenorrhea were PCOD (30%), Genital tuberculosis (15%), POF (15%), hyperprolactinemia (10%). According to Su Kyong et al 2014 (7) common causes

were PCOD (48%), POF (14%), hyperprolactinemia (8.1%), hypergonadotropic (8.3%), Asherman (5%), thyroid disease (1.5%).

PCOD was the most common cause of amenorrhea. It was also compatible with various western studies. According to Reindollar et al PCOD responsible for common cause of amenorrhea (28%). Rotterdam 2003 criteria used to diagnose PCOD. It has been recently reported that using different diagnostic criteria the prevalence was 18% (March et al). Weight loss of 5-10% associated with beneficial effect on reproductive system (Huber-Buchholz et al 1999). Metformin reduces insulin resistance in PCOS (Meyer et al 2007). Life style modification, weight reduction, OCP advised to the patients with PCOS. Metformin added to the patients with insulin resistance.

In our study 15% had POF. Patients presented with symptoms of hot flushes and hypomenorrhea followed by amenorrhea. HRT given to eliminate the symptoms of oestrogen deficiency and help to prevent osteopenia which was seen by study of Robert et al.

Genital TB is the cause of secondary amenorrhea in infertility (8). 15% were diagnosed with tuberculosis. ATT (cat 1) given to the patients after the results progesterone and E+P test declared negative. Normal restoration of menses within 3-4 months of start of ATT.

10% patients had hyperprolactinemia, out of which 4 patients presented with galactorrhea, only one had visual disturbance. MRI done for the size of tumor and patient refer to endocrinologist. Dopamine agonist are treat of choice (Iyer and molitch 2011). Cabergoline advised for 4 week. Normal restoration of menses occurred within 4 week.

Drug induced amenorrhea seen in 6% of patients. Out of 6, three patients took injection depo-provera, two were on low dose OCP for more than 2 years and one patient was on dienogest. Studies show that women are most likely to experience amenorrhea after 1 year of treatment with OCP (Wright KP et al 2008). Lthyroxine given to patients with hypothyroidism, 44.4 % resumed period within 4week.

Asherman syndrome seen in 7% of patients, all had history of D/C, three patients had more than two D/C. Hysteroscopic adhesiolysis done in all cases. Sheehan syndrome seen in 2 patients, both had history of severe PPH after normal delivery. MRI done in these patients showed empty sella turcica. These patients are at risk of osteoporosis, HRT should be started (KeleStimur 2003).

Two patients diagnosed with bony chip, both had late first trimester abortion. Hysteroscopic guided bony chip removal followed by oestrogen given to the patients. In one case no abnormalities found, all investigation were normal, OCP was advised.

## 5. Conclusion

Further research is needed to clarify secondary amenorrhea and the related endocrine disorder in order to make an early diagnosis and to identify the more appropriate strategies

during reproductive years of life .No evidence indicates that the prevalence of amenorrhea varies according to national origin or ethnic group. However, local environmental factors related to nutrition and the prevalence of chronic disease undoubtedly have an effect. A detailed history ,examination and laboratory analysis will identify most causes.

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