



## PREVALENCE OF ENDOMETRIOSIS SYMPTOMS AMONGST ADOLESCENT FEMALES PRESENTING TO A TERTIARY CARE HOSPITAL IN SOUTHERN INDIA

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### ABSTRACT

**Introduction:** Endometriosis is classically defined by the presence of endometrial glands and stroma outside the uterine lining<sup>1,2</sup>. Ectopic endometrium can be found outside the uterine cavity in the peritoneal cavity, ovaries, bladder and ureters. The incidence of endometriosis in adolescents with chronic pelvic pain is reported to be ranging from 25-73%<sup>1</sup> while prevalence amongst adolescents non responsive to conventional medical therapy is estimated to be between 49% to 75%<sup>1</sup>. The true disease prevalence in the general adolescent population remains unknown. The purpose of our study was to screen adolescents based on a questionnaire tool, for identifying symptoms of endometriosis.

**Methodology:** This single-centre study was conducted over a period of 6 months, in the department of Obstetrics and Gynaecology in a tertiary care hospital of Southern India. A total of 100 adolescent females were enrolled in the study and a validated questionnaire, which was developed after reviewing literature and selected risk factors, symptoms and phenotypic traits of endometriosis, was provided to each participant.

**Results:** It was found from analysis of the responses to the questionnaire that 73% females had painful periods, out of which 15% had dysmenorrhea associated with diarrhea. 11% had dyschezia, 14% had gastritis, nausea, bloating, 4% had dysuria, 9% had increased frequency of micturition, and 5% experienced incomplete bladder emptying as well.

**Conclusion:** Adolescent endometriosis is difficult to diagnose as it has different presentations. An endometriosis screening questionnaire may be an important tool for both clinicians as well as for self-screening by adolescents, thus enabling prompt evaluation of adolescents at risk of endometriosis.

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## INTRODUCTION

Endometriosis is a gynecologic disorder, which is classically defined by the presence of endometrial glands and stroma outside the uterine lining<sup>1,2</sup>. Ectopic endometrium can be found outside the uterine cavity in the peritoneal cavity, ovaries, bladder and ureters.

Sampson was the first to introduce the term “endometriosis” into medical nomenclature. He gave the most widely accepted theory that endometriosis was a result of retrograde transport of menstrual blood<sup>3</sup> and implantation of this endometrial tissue in sites away from the uterus.

Endometriosis is a significant cause of secondary dysmenorrhea and chronic pelvic pain amongst adolescents. The prevalence of endometriosis in adolescents with dysmenorrhea and chronic pelvic pain is reported to be ranging from 25-73%<sup>1</sup>. The prevalence amongst adolescents who remain unresponsive to conventional medical therapy is estimated to be as high as 49% to 75%<sup>1</sup>. It has been reported that delay in diagnosis can result in potential progression of disease, fibrosis, and possible impact on fertility<sup>2</sup>.

Endometriosis commonly presents in adolescents as dysmenorrhea or chronic pelvic pain. Dysmenorrhea is often associated with urinary symptoms such as dysuria and urgency, or gastrointestinal symptoms such as bloated sensation and diarrhea<sup>1,2</sup>. It is suggested that the initial evaluation<sup>2</sup> of an adolescent for endometriosis should begin with a comprehensive history followed by a physical examination, to rule out a pelvic mass or a reproductive tract anomaly. A rectal exam is better tolerated particularly if an adolescent is not sexually active.

Laparoscopy is the mainstay of diagnosis of endometriosis<sup>1,2</sup>, but it is an invasive procedure which cannot be performed on every female. Many researchers have suggested targeting an earlier diagnosis of endometriosis symptoms in adolescents, by proposing a list of questions<sup>4,5</sup> that treating physicians can ask adolescents presenting with dysmenorrhea, and identify patients at risk of endometriosis.

It has been suggested by the ESHRE<sup>1</sup> that an endometriosis questionnaire tool, may be used to identify adolescents with symptoms of endometriosis, so that there is prompt initiation

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gastritis with nausea, bloating, 4% had painful urination, 9% had increased frequency of micturition, and 5% experienced incomplete bladder emptying as well.

Only 10% of the females with dysmenorrhea took pain relief medication while 90% of these females did not take any pain killers. Figure 2 shows the distribution of symptoms.

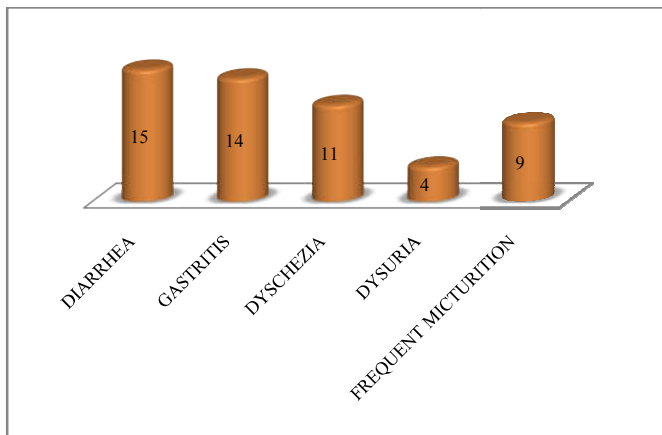


Figure 2 Symptom distribution in adolescent females with dysmenorrhea

13% females had undergone sonological evaluation for dysmenorrheal, and 16% had a positive history of endometriosis in their mothers or sisters. 30% of these adolescent females with dysmenorrheal also reported absenteeism from school/college during periods.

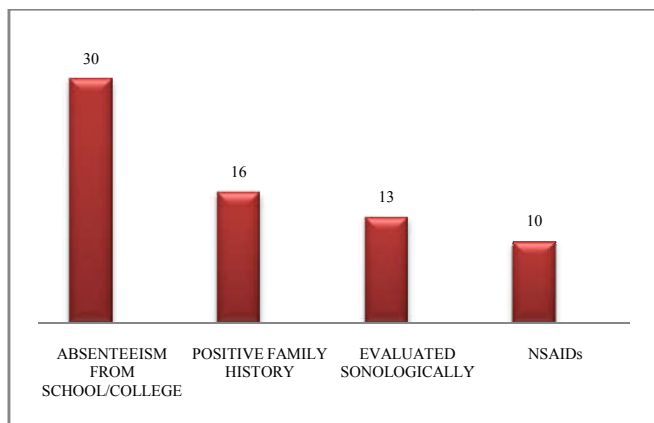


Figure 3 Family history and quality of life in adolescents with dysmenorrhea

## DISCUSSION

Endometriosis is an important cause of secondary dysmenorrhea in adolescents and must be a differential diagnosis in females with persistent dysmenorrhea unresponsive to primary medical management with NSAIDs or hormonal contraceptive pills<sup>1</sup>. Similar to endometriosis in adults, endometriosis in adolescents is also thought to be an estrogen-dependent disorder<sup>2-5</sup>, causing inflammatory stress and thus the symptoms. Pain is the consequence of an increased circulating prostaglandin levels due to increased estrogen produced by not just the ovaries, but also by endometriotic implants.

Our study reported that 73% females experienced painful periods, out of which 56% had pain starting before the onset of menstruation, and in 39% patients, the pain was not relieved even after onset of periods. 11% of these females with dysmenorrhea had intermenstrual spotting as well, suggesting A hormonal imbalance. Gastrointestinal symptoms were found

in 15% of these females with dysmenorrhea having diarrhea, 11% having painful defecation or dyschezia, 14% having gastritis. Urinary symptoms were also noted with 4% having painful urination, and 9% having increased frequency of micturition.

Risk factors for adolescents to develop endometriosis may include family history, genital malformations, and early age at menarche. Studies suggest that a positive family history for endometriosis and early age of menarche may be associated<sup>1,4</sup> with adolescent endometriosis but the association is uncertain<sup>1</sup>. Family history of endometriosis is important, because patients with an affected first degree relative have a 7 to 10-fold increased risk<sup>2</sup> of developing endometriosis. Rh factor Negative blood groups are shown to have a higher incidence of endometriosis<sup>1,2</sup> and its symptoms, however in our study only 5% had Rh Negative blood group.

In our study, we found that 69% adolescents with dysmenorrhea had attained menarche by the age of 12 years, out of which 6% adolescents had menarche before 11 years age, and 63% by 12 years of age while only 16% had positive family history of endometriosis thus again suggesting an uncertain association.

Endometriosis is found to be the most common diagnosis in young females who undergo laparoscopy for chronic pelvic pain, and for infertility evaluation. ACOG<sup>2</sup> suggests that at least 66% of adolescent females with chronic pelvic pain or dysmenorrhea will eventually be diagnosed with endometriosis at the time of diagnostic laparoscopy. Chapron *et al* in their study published in the Lancet<sup>5</sup> reported that the results of a validated questionnaire can be graded according to a scoring system suggested by the authors, which takes into account a positive family history of endometriosis, primary infertility, BMI, regular cycles, dysmenorrhea, gastrointestinal symptoms and urinary symptoms. A score higher than 25, is highly suggestive of endometriosis.

Endometriosis in adolescents is considered a chronic disease with potential for progression, especially if left untreated<sup>5-10</sup>. Treatment must be aimed at providing both symptomatic relief, as well as preserving future fertility<sup>12-15</sup>. Therapy must be individualized, as per patient choice, the need for contraception, contraindications to hormone use, and potential adverse effects.

The ESHRE<sup>1</sup> recommends that in adolescents with severe dysmenorrhea and suspected endometriosis-associated pain, empirical medical management must be provided. Combined hormonal contraceptives or progestogens either systemically or via LNG-IUS<sup>13</sup>, are safe and considered as the first line hormone therapy. NSAIDs should also be a treatment option, especially if first line hormone treatment is not an option.

In adolescents not responding to medical management, and with laparoscopically confirmed endometriosis, GnRH agonists may be considered for up to 1 year<sup>1,2,18</sup>. GnRH agonists suppress the hypothalamic-pituitary-ovarian axis, resulting in a hypoestrogenic state that may induce amenorrhea, relieve pelvic pain, and reduce the size of endometriosis lesions. Common side effects of this low estrogen state include bone density loss, hot flashes, depression, and memory loss. To minimize these side effects, "add-back therapy," a low dose of hormone taken daily<sup>1,2,16,18</sup> is often prescribed as an adjunct.

It is recommended that if surgical treatment is indicated in adolescents with endometriosis, it should be performed laparoscopically<sup>1,2,20</sup>. Upon laparoscopy, most adolescents are diagnosed with early-stage endometriosis<sup>16,18</sup>. Though typically diagnosed with earlier stage disease, adolescents may still experience substantial pain because the clear and red lesions have greater prostaglandin production and subsequent pain and inflammation than the powder burn lesions seen in adult women<sup>16,18-25</sup>. The aim should be to provide complete laparoscopic clearance of all visible endometriotic lesions<sup>1,2</sup>.

The ESHRE<sup>1</sup> also recommends that adolescents with endometriosis should be informed of the potential detrimental effect of ovarian endometriosis and surgery, on ovarian reserve and future fertility. Fertility preservation options exist and adolescents must be informed about them, although the true benefit, safety, and indications in adolescents with endometriosis remain unknown.

## CONCLUSION

A high index of suspicion for endometriosis-like symptoms amongst adolescents, may help delay disease progression and thus protect the reproductive potential. We suggest that the questionnaire tool that we have used, may be employed as a screening tool to empower clinicians, and also, as a self-screening tool to cause awareness of endometriosis symptoms amongst adolescents.

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