

Pain Levels of Women Diagnosed with Endometriosis: Is There a Difference in Younger Women?



A. Wüest^{1,#}, J.M. Limacher^{1,#}, I. Dingeldein¹, F. Siegenthaler¹, C. Vaineau¹, I. Wilhelm², M.D. Mueller¹, S. Imboden^{1,*}

¹ Department of Gynecology and Obstetrics, Bern University Hospital and the University of Bern, Bern, Switzerland

² Department of Anesthesiology and Pain Medicine, Bern University Hospital and the University of Bern, Bern, Switzerland

ABSTRACT

Study objective: Early diagnosis and treatment of endometriosis affecting adolescent women are important in preventing chronic pain. Our aim was to analyze the clinical characteristics and severity of symptoms in adolescent patients with endometriosis compared with older patients.

Methods: This single-center retrospective cohort study in a tertiary referral hospital analyzed women whose first consultation at the certified endometriosis center of Bern University Hospital between January 2017 and December 2020 resulted in the clinical diagnosis of endometriosis. Patients, divided into 2 groups by age, reported visual analog scale (VAS) scores for noncyclic pelvic pain, dysmenorrhea, dyschezia, dysuria, and dyspareunia. The symptom types and severity in the 2 groups were compared. The young patients with endometriosis were analyzed in greater detail, comparing VAS scores and types of endometriosis.

Results: From a total of 826 patients, 144 (17.4%) patients 24 years old or younger and 682 (82.6%) patients over 24 years old were compared. The younger patients reported significantly higher pain scores for dysmenorrhea (VAS 7.3 vs 6.6; $P = .015$), dyspareunia (VAS 4.6 vs 3.4; $P = .001$), and noncyclic pelvic pain (VAS 4.3 vs 3.7; $P = .032$) compared with the older patient collective. Similar results were found when excluding patients with hormonal treatment.

Conclusion: Young patients with clinically diagnosed endometriosis have significantly higher dysmenorrhea and dyspareunia pain levels than older patients. By acknowledging and understanding this, early diagnosis and adequate treatment can be promoted. Dyspareunia in adolescents in particular merits clinical attention.

Key Words: Adolescent endometriosis, Pain, Endometriosis, Dyschezia, Dysmenorrhea, Dyspareunia, Dysuria, Noncyclic pelvic pain, VAS scores

Introduction

Endometriosis is a gynecological condition characterized by the presence of extra uterine endometrial glands and stroma. The disease is estimated to affect approximately 10% of all women of reproductive age.¹ Several symptoms are associated with endometriosis, the leading cause of chronic pelvic pain.² In the adult population, the most common symptoms are dysmenorrhea, dyspareunia, dyschezia, and infertility.³ However, the disease occurs not only in the adult population but also in adolescents and young women.

Endometriosis patients often report that their symptoms already occurred in adolescence.⁴ According to a large registry, two-thirds of women diagnosed with endometriosis in adulthood have already had symptoms before the age of 20.⁵ Nevertheless, especially in young women, the diagnosis of endometriosis is delayed, even more than in older patients. In the review of Yeung et al from 2017,⁶ the diagnosis was delayed on average by 12 years in adolescents. Possibly, in countries that have pushed awareness in young

people, this time is reduced. Women and girls who first experienced symptoms as adolescents waited 3 times longer (around 6 years) before seeing a doctor compared with those with symptom onset in adulthood⁴; young women often have consultations with 4 or 5 different physicians before the diagnosis is established.^{4,5} Most adolescent girls with noncyclic chronic pelvic pain not responding to conventional medical therapy (such as oral contraceptive pills or nonsteroidal anti-inflammatory drugs) have endometriosis.⁶⁻⁸ Still, the prevalence of endometriosis in the young population is less clear than in the adult population.

Adolescent endometriosis presents differently from adult endometriosis. The main symptoms in adolescents and young women are noncyclic chronic pelvic pain and dysmenorrhea.⁶ However, little is known about pain intensity and different types of symptoms. The disease has an impact on the quality of life. It is associated with absenteeism from school and a lack of participation in daily activities.⁹ Compared with unaffected peers, adolescents and young women with diagnosed endometriosis reported significantly worse quality of life.¹⁰ More and earlier clinical diagnoses and an early start with treatment are important, especially in the young collective, and could possibly prevent chronic pain disorders and reduce the negative impact of endometriosis on the quality of life of young

* Address correspondence to: Dr Sara Imboden, Department of Obstetrics and Gynecology, University Hospital of Bern, Friedbühlstrasse 19, CH-3010 Bern, Switzerland; Phone +41 31 632 10 10.

E-mail address: sara.imboden@insel.ch (S. Imboden).

The authors contributed equally to this paper

women. To improve early diagnosis, a deeper understanding of the symptoms of young patients with endometriosis is required. This study aimed to compare types of symptoms and symptom severity by age.

Methods

This study was a monocentric cohort study. Data were collected prospectively and analyzed retrospectively. The database included all consultations in the certified endometriosis center of Bern University Hospital with informed consent from January 2017 to December 2020. All patients with a diagnosis of endometriosis (either clinically suspected, diagnosed by examination and imaging, or confirmed by surgery) were included.

Clinical data were obtained from the hospital's internal database, collected prospectively and systematically (done as part of the certification of the center). The database included visual analog scale (VAS) scores for the different types of pain (noncyclic pelvic pain, dysmenorrhea, dyschezia, dysuria, and dyspareunia), reason for the consultation, current hormonal treatment, past surgery, examination findings, suspicion of endometriosis, recommended measures, and past pregnancies or births. The women rated the severity of their symptoms over the 4 weeks before the consultation using VAS scores, from 0 (no pain) to 10 (worst possible pain).

To establish a clean cohort, we selected all patients coming for the first time to the certified endometriosis center of Bern University Hospital, where the diagnosis of endometriosis was made. In this certified endometriosis center, patients are either referred by a general gynecologist due to complex cases or seek a specialist on their own.

The patient collective was divided into 2 groups according to age: patients 24 years old or younger and patients 25 years old or older. We compared the types of symptoms of the 2 groups and analyzed whether there was a difference in the severity of the symptoms. The same analysis was conducted for all patients with no hormonal treatment at the time of the first consultation.

A detailed analysis of the clinical parameters of the young collective was conducted. The data required for this purpose were collected retrospectively. We analyzed the women's medical histories (past surgeries, diagnostics, and type of endometriosis).

The primary outcome was a difference in the severity of the symptoms between the 2 age groups, with and without hormonal treatment. The secondary outcome was a descriptive analysis of the younger patient collective.

For this research, ethics approval was obtained from the Ethics Commission of the Canton of Bern, Switzerland (reference number: 2020-00937).

Statistics

The statistical analysis was performed using IBM SPSS Statistics (version 25.0). For patient and clinical data analyses, basic descriptive statistics were applied. To compare the characteristics between the groups, a χ^2 test and ANOVA were used. A nonparametric test was used for vari-

ables not meeting the assumptions of the *t* test equivalent. All tests were 2-sided, and *P* values less than .05 were considered statistically significant.

Results

A total of 2583 consultations were analyzed. After the inclusion and exclusion criteria were applied, 826 women who had their first consultation at the certified endometriosis center and were diagnosed with endometriosis were included in the study (Fig. 1). Patient characteristics are summarized in Table 1. The median age was 32.17 years (15–53 years) at the time of the first consultation. One hundred and forty-four (17.4%) patients were 24 years old or younger, whereas 682 (82.6%) were 25 years old or older. In 675 patients (81.7%), VAS scores were documented. Of the young women, 92.4% (*n* = 133) visited the endometriosis center because of pain. In the older collective, pain was the reason for consultation in only 69.9% (*n* = 477) of the patients. Other common reasons for consultation in the older collective were diagnostic findings (*n* = 58, 8.5%), infertility (*n* = 51, 7.4%), or second opinions (*n* = 32, 4.7%). Diagnosis was surgically confirmed in 45.0% (*n* = 372) of the patients; the other 55.0% (*n* = 454) had a clinical diagnosis of endometriosis. The diagnosis of endometriosis was given if the patient had the typical symptoms and/or findings in the gynecological examination including ultrasound and in some cases also an MRI. This is explicitly recommended for adolescents in the 2022 ESHRE guidelines.

A total of 489 women were not undergoing hormonal treatment at the time of the first consultation. In 39.6% (*n* = 327) of the cases, hormonal therapy was initiated after the first consultation. In 23.4% (*n* = 193) of the cases, surgery was recommended.

Table 2 shows the comparison of the VAS scores of the patients consulting the endometriosis center for the first time. Young patients had significantly higher pain scores for dysmenorrhea (VAS 7.3 vs 6.6; *P* = .015), dyspareunia (VAS 4.6 vs 3.4; *P* = .001), and noncyclic pelvic pain (VAS 4.3 vs 3.7; *P* = .032) (Fig. 2a). The VAS scores for dysuria and dyschezia were also slightly higher in the younger collective, but the difference was not statistically significant.

In Table 2, we also compare all patients at the first consultation without any previous hormonal treatment (*N* = 489). Sixty-eight (13.9%) of these patients belonged to the younger collective, and 421 (86.1%) belonged to the older collective. The younger patients had significantly higher VAS scores for dysmenorrhea (VAS 8.1 vs 7.1, *p* = 0.001) and dyspareunia (VAS 4.8 vs 3.3, *p* = 0.002) compared with the older collective (Fig. 2b). VAS scores for dysuria, dyschezia, and noncyclic pelvic pain were slightly higher in the younger collective, but the difference was not statistically significant.

The focus of our study was on young patients with endometriosis, which is why the cohort of young women with endometriosis (*n* = 144) was analyzed in more detail.

The youngest patient in this collective was 15 years old at the time of the first consultation. In the first consultations of the young women, hormonal treatment was initiated or continued in 123 (85.4%) women. Of these young



Fig. 1. Flowchart of the study cohort that shows the inclusion and exclusion criteria.

patients, 36.8% ($n = 53$) had a minimum of 1 surgery; 31 had already undergone an operation before the first consultation in the certified endometriosis center. In 22 patients, surgery was recommended and carried out. In 34 young patients, the revised American Society for Reproductive Medicine (rASRM) score was recorded: 21 (61.8%) patients had a score of I, 5 (14.7%) patients had a score of II, 6 (17.6%) patients had a score of III, and 2 (5.9%) patients had a score of IV.

Looking at the type of endometriosis clinically, we saw the following distribution diagnosed by sonography, MRI, or/and confirmed by surgery: 21 of the 144 young women were diagnosed with deep infiltrating endometriosis; in 16 patients, the deep infiltrating endometriosis was diagnosed by MRI or surgery, and in 5 patients, the diagnosis was provided by clinical and sonographic examination (for these 5 patients, no further diagnostic was needed, and no surgery was performed). A total of 38 young patients (26.4%) had

adenomyosis diagnosed by sonography or MRI. Thirteen (9%) young women had ovarian endometriosis diagnosed by MRI or sonography.

Three of the young women had already been pregnant at least once; all 3 had had at least 1 abortion.

Deeper Analysis of the Young Cohort

Comparison of the symptoms presented at the first consultation with the different forms of endometriosis in the young collective revealed a significant difference in only 2 categories of symptoms (Table 3). We found that young women with adenomyosis reported significantly higher VAS scores for dysuria (2.5 vs 1.7; $P = .031$) compared with young women with other forms of endometriosis. The young women with an earlier stage of endometriosis (rASRM stage I or II) reported significantly higher VAS scores for dyspareunia (5.1 vs 1.6; $P = .018$) compared with

Table 1
Patient Characteristics (Diagnosis and Therapy, Pregnancy Status, and History of Reproductive Medicine) Comparing the Two Different Age Groups

| | Total N = 826 | Age ≤ 24 years N = 144 | Age ≥ 25 years N = 682 | P value |
|---|---------------|---------------------------|---------------------------|---------|
| Diagnosis and therapy | | | | |
| Clinically confirmed diagnoses | 816 | 144 (100.0%) | 672 (98.5%) | .144 |
| Nonclinical diagnosis | 10 | 0 (0.0%) | 10 (1.5%) | |
| Diagnosis total | 826 | 144 | 682 | |
| Surgically confirmed diagnoses | 372 | 31 (21.5%) | 341 (50.0%) | .000 |
| No surgery | 454 | 113 (78.5%) | 341 (50.0%) | |
| Surgery recommended | 193 | 22 (15.3%) | 171 (25.1%) | .001 |
| No surgery recommended | 633 | 122 (84.7%) | 511 (74.9%) | |
| Start with hormonal treatment | 327 | 79 (54.9%) | 248 (36.4%) | .000 |
| No changes in hormonal therapy | 499 | 65 (45.1%) | 434 (63.6%) | |
| Pregnancy status | | | | |
| Gravida > 0 | 224/769 | 3 (2.2%) | 221 (34.9%) | .000 |
| G0 | 545/769 | 132 (97.8%) | 413 (65.1%) | |
| Para > 0 | 177/768 | 0 (0.0%) | 177 (28.0%) | .000 |
| P0 | 591/768 | 135 (100.0%) | 456 (72.0%) | |
| Abort > 0 | 92/767 | 3 (2.2%) | 89 (14.1%) | .000 |
| A0 | 675/767 | 132 (97.8%) | 543 (85.9%) | |
| Current desire for pregnancy | 167/744 | 2 (1.6%) | 165 (26.8%) | .000 |
| No current pregnancy desire | 577/744 | 127 (98.4%) | 450 (73.2%) | |
| Currently infertility > 12 months | 107/742 | 1 (0.8%) | 106 (17.3%) | .000 |
| No infertility | 635/742 | 128 (99.2%) | 507 (82.7%) | |
| History of reproductive medicine | | | | |
| Reproductive medicine administered | 55 | 1 (1.0%) | 54 (13.8%) | .000 |
| No reproductive medicine administered | 436 | 98 (99.0%) | 338 (86.2%) | |
| (Total) Missing | (491) 335 | (99) 45 | (392) 290 | |

the young women with a severe stage of endometriosis (rASRM stage III or IV).

Discussion

The primary finding of this study was a difference in the severity of the symptoms between the 2 age groups, both with and without hormonal treatment. The secondary outcome was a descriptive analysis of the young patient group.

Research focusing on the adolescent population is rare. A large survey demonstrated that young girls often begin to suffer from endometriosis in their adolescence, with 70% of patients reporting symptoms before age 20 and nearly 40% before age 15.¹¹ Indirect evidence gathered by the American College of Obstetricians and Gynecologists in 2005 suggests widespread occurrence of endometriosis in adolescence because in approximately 60% of adult patients with endometriosis, symptoms had already started before 20 years of age.¹²

However, because early identification and treatment of endometriosis could help resolve pain, prevent disease progression and organ damage, and preserve fertility,¹³ we should pursue the diagnosis of endometriosis in adolescent girls and women.

Given the lack of noninvasive diagnostic tests, symptoms present in adolescent females are probably the most reliable predictors of endometriosis.

According to a review by Chapron et al,¹⁴ the main signs of endometriosis in young women are prolonged use of nonsteroidal anti-inflammatory drugs, family history of endometriosis, frequent absenteeism from school or work during menstruation, and prescription of combined contra-

ceptives before 18 years of age to treat severe primary dysmenorrhea.

In this study, we found that younger patients came to the endometriosis center with significantly higher VAS scores for dysmenorrhea, dyspareunia, and noncyclic pelvic pain compared with the older collective. Many studies demonstrate that the severity of a case of endometriosis does not correlate with the pain severity; however, there seems to be an age difference factor that has not been documented this clearly before. The question is whether the endometriosis itself is different in younger women or whether it is due to the pain perception of younger women. Moreover, if young women have so much pain, why is it still considered normal by family doctors or even specialists? Possible reasons for the delay in diagnosis are ignorance of pain as a possible sign of endometriosis in adolescent women and the lack of knowledge and experience of the adolescents themselves, not knowing how to advocate for their own diagnosis and treatment. Di Vasta et al¹⁵ assumed that delays frequently occurred between the presentation of symptoms to a clinician and the referral to a gynecologist, often including visits with non-gynecologic specialists and misdiagnoses. Greene et al⁴ noticed that adolescents with pelvic pain could present a diagnostic challenge because they describe noncyclic pain as well as cyclic pain and might present with an array of confounding symptoms. This cross-sectional study of 4746 women showed that girls with onset of symptoms in adolescence were significantly more often told nothing was wrong compared with those whose symptoms began when they were adults. More than half of the respondents (59.6%) reported that they were not taken seriously by their physicians overall, and each step

Table 2

Comparison of the Visual Analog Scale (VAS) Scores of the Patients Consulting the Endometriosis Center for the First Time with and without Hormonal Treatment

| All patients coming for their first consultation N = 675 | | | | |
|---|----------------|--------------------------------|--|-----------------|
| VAS dysmenorrhea | Age ≤ 24 years | 7.3 (SD = 2.6; CI, 6.8-7.8) | | P = .015 |
| | Age ≥ 25 years | 6.6 (SD = 2.7; CI, 6.4-6.9) | | |
| VAS noncyclic pelvic pain | Age ≤ 24 years | 4.3 (SD = 2.8; CI, 3.8-4.8) | | P = .032 |
| | Age ≥ 25 years | 3.7 (SD = 2.8; CI, 3.5-4.0) | | |
| VAS dyschezia | Age ≤ 24 years | 3.0 (SD = 2.9; CI, 2.4-3.5) | | P = .474 |
| | Age ≥ 25 years | 2.7 (SD = 3.0; CI, 2.5-3.0) | | |
| VAS dysuria | Age ≤ 24 years | 1.7 (SD = 2.6; CI, 1.2-2.2) | | P = .668 |
| | Age ≥ 25 years | 1.6 (SD = 2.5; CI, 1.4-1.8) | | |
| VAS dyspareunia | Age ≤ 24 years | 4.6 (SD = 3.2; CI, 4.0-5.2) | | P = .001 |
| | Age ≥ 25 years | 3.4 (SD = 3.0; CI, 3.2-3.7) | | |
| Patients without hormonal treatment by the first consultation N = 489 | | | | |
| VAS dysmenorrhea | Age ≤ 24 years | 8.1 (SD = 1.8; CI, 7.7-8.6) | | P = .001 |
| | Age ≥ 25 years | 7.0 (SD = 2.3; CI, 6.8-7.3) | | |
| VAS noncyclic pelvic pain | Age ≤ 24 years | 4.2 (SD = 2.9; CI, 3.4-4.9) | | P = .066 |
| | Age ≥ 25 years | 3.5 (SD = 2.7; CI, 3.2-3.7) | | |
| VAS dyschezia | Age ≤ 24 years | 3.0 (SD = 2.8; CI, 2.2-3.7) | | P = .432 |
| | Age ≥ 25 years | 2.6 (SD = 2.9; CI, 2.3-2.9) | | |
| VAS dysuria | Age ≤ 24 years | 1.7 (SD = 2.6; CI, 1.0-2.4) | | P = .428 |
| | Age ≥ 25 years | 1.4 (SD = 2.4; CI, 1.2-1.7) | | |
| VAS dyspareunia | Age ≤ 24 years | 4.8 (SD = 3.1; CI, 3.9-5.8) | | P = .002 |
| | Age ≥ 25 years | 3.3 (SD = 2.9; CI, 3.0-3.6) | | |

Table 3

Comparison of the Different Forms of Endometriosis and the Visual Analog Scale (VAS) Scores in the Young Collective (≤ 24 years old)

| | VAS dysmenorrhea | VAS noncyclic pelvic pain | VAS dyschezia | VAS dysuria | VAS dyspareunia |
|---|--|--|--|--|--|
| Total N = 144 | | | | | |
| Deep infiltrating endometriosis N = 21 | 7.3 (SD = 3.2; CI, 5.8-8.7; P = .917) | 5.0 (SD = 2.8; CI, 3.6-6.3; P = .277) | 3.7 (SD = 2.9; CI, 2.3-5.1; P = .232) | 2.3 (SD = 2.6; CI, 1.0-3.5; P = .293) | 5.0 (SD = 3.7; CI, 3.2-6.8; P = .553) |
| Ovarian endometriosis N = 13 | 6.6 (SD = 2.4; CI, 4.8-8.4; P = .398) | 4.0 (SD = 3.1; CI, 1.8-6.2; P = .712) | 2.0 (SD = 3.2; CI, -0.37-4.3; P = .244) | 2.2 (SD = 3.0; CI, 0.02-4.3; P = .558) | 3.0 (SD = 3.7; CI, 0.3-5.7; P = .100) |
| Adenomyosis N = 38 | 7.6 (SD = 1.9; CI, 7.0-8.3; P = .378) | 4.4 (SD = 3.0; CI, 3.4-5.5; P = .782) | 3.3 (SD = 2.9; CI, 2.3-4.3; P = .443) | 2.5 (SD = 3.1; CI, 1.4-3.7; P = .031) | 5.1 (SD = 3.1; CI, 3.9-6.4; P = .318) |
| rASF °I and °II N = 26 | 6.9 (SD = 3.1; CI, 5.5-8.2) | 5.5 (SD = 2.8; CI, 4.3-6.7) | 3.1 (SD = 2.5; CI, 2.0-4.2) | 1.3 (SD = 2.0; CI, 0.448-2.2) | 5.1 (SD = 3.5; CI, 3.3-6.8) |
| rASF °III and °IV N = 8 | 6.1 (SD = 3.2; CI, 3.2-9.1; P = .595) | 3.8 (SD = 2.5; CI, 1.7-5.8; P = .136) | 2.5 (SD = 3.6; CI, -0.54-5.5; P = .605) | 1.4 (SD = 2.7; CI, -0.79-3.7; P = .882) | 1.6 (SD = 2.3; CI, -0.27-3.5; P = .018) |



Fig. 2. (a) Comparison of the visual analog scale (VAS) scores for dysmenorrhea, noncyclic pelvic pain, and dyspareunia in the younger (≤ 24 years old) and older (> 24 years old) collectives for all first consultations. (b) Comparison of the VAS scores for dysmenorrhea and dyspareunia in the younger (≤ 24 years old) and older (> 24 years old) collectives for the first consultations without hormonal treatment.

of the diagnostic process took longer for the adolescence-onset group.

Therefore, we can postulate that dysmenorrhea might have a bigger impact in adolescent women, a higher pain level than in the older collective. If a possible delay in diagnosis and possible under-treatment once a diagnosis has been established lead to a higher pain level, the consequences can have a great impact on the course of the disease.

The significantly higher pain scores for dyspareunia in adolescent girls compared with the older patient collective should also be discussed. Dyspareunia is an important indicator of possible endometriosis. In the study of Martire et al,¹⁶ dyspareunia reached a prevalence of 33% for all forms of endometriosis, 25% for deep infiltrating endometriosis and endometriomas, and 12.5% for adenomyosis. Many adult women with endometriosis experience pain during intercourse or in the 24 hours following pen-

etrative sex. Schneider et al¹⁷ found that young adults with endometriosis were nearly twice as likely to experience dyspareunia (79%) than controls without known endometriosis (40%). The prevalence of dyspareunia in adolescent and young adult women was high, with over three-quarters of participants in their sample experiencing pain from sexual intercourse. A longitudinal cohort study highlighted that the impact of dyspareunia on both relationships and social functioning during adolescence and young adulthood could be particularly distressing and negatively impact self-image as well as overall health.¹⁷ Pain during sexual intercourse could confer a great additional burden, beyond other symptoms.

However, dyspareunia does not appear to be an uncommon symptom of adolescent girls, including those without diagnosed endometriosis. Landry et al¹⁸ found that dyspareunia was reported by 1 in 5 girls in a cross-sectional study within a large adolescent sample. The dyspareunia reported

was mostly primary chronic (6 months or more) and at the vaginal opening.

Acyclic pain seems to be more common in adolescents than in adults.⁶ In our study, noncyclic pelvic pain was also significantly higher in the adolescent group compared with the adults.

Similar results regarding the degree of pain were found in the cross-sectional study of Di Vasta et al.¹⁵ They also compared symptoms of endometriosis in surgically diagnosed adolescent and adult women. Most participants (93%) experienced moderate menstrual pain (pain usually requiring medication) to severe menstrual pain (pain requiring medications and bed rest), without an appreciable difference between the age groups. They concluded that pelvic pain could be severe already at a young age: Half of those diagnosed as adolescents reported pain starting with their very first period, compared with one-third of adults, which has a great negative impact on the quality of life.

According to the literature, women with a history of early dysmenorrhea are more likely to have and develop endometriosis than women who never or rarely experience pain during menstruation; the risk even increases with the amount of reported pain.^{19,20} The fact that the pain level does not correlate with the severity of the endometriosis (rASRM stage) is known and is also reflected in our analysis on the forms of endometriosis in young women.^{3,21}

We explored whether there was any correlation in our collective between symptoms and the type of endometriosis. We found that young women with adenomyosis reported significantly higher VAS scores for dysuria compared with young women with other forms of endometriosis, and 21 (14.6%) of the 144 young women had a diagnosis of deep infiltrating endometriosis. Deep infiltrating endometriosis or an advanced stage of the disease (rASRM III or IV) can be detected already in young women. This is in line with previously published articles.^{22–24} Vicino et al²⁵ found no difference in stages of surgically treated endometriosis between adolescents aged 18 years and younger compared with patients 19 years old or older, whereas the two groups showed severe endometriosis in 75% and 66% of cases, respectively. They concluded that even in adolescence, the risk of severe endometriosis must be considered. The analysis of our young cohort, with clinically diagnosed deep infiltrating endometriosis, confirms this statement.

In young women in our cohort, significantly fewer surgeries were performed or recommended. However, 21.5% of our adolescents had a surgically confirmed diagnosis (including cases before the first consultation) already at this young age. The 2022 ESHRE guidelines recommend that the diagnosis of endometriosis and an empirical treatment should be given when clinical signs are clear enough, without a previous diagnostic laparoscopy.²⁶ An accurate clinical and imaging evaluation can be much more effective, along with being noninvasive for the patient, allowing for both early diagnosis and adequate clinical management, with surgery justified only for intractable cases.¹⁶

The limitations of our study are that data, especially for certification, were collected prospectively, whereas findings such as information from endometriosis forms and other clinical data were added retrospectively. Due to the differ-

ent age range, the numbers between the 2 groups (older and younger) differ and therefore do not represent 2 similar cohorts.

A major strength of the study is that we obtained VAS scores directly from the patients; however, further detailed descriptions of the pain experienced, pain timeline, and pain altering diagnosis, such as psychiatric disease, were not evaluated.

Another major strength of this study is that it is the first study, to our knowledge, to compare, using VAS scores, symptoms of adolescents with symptoms of adults; this is important to understand the degree of suffering even at a young age.

Conclusions

Young patients with clinically diagnosed endometriosis have significantly higher dysmenorrhea and dyspareunia pain levels than older patients. By acknowledging and understanding this, early diagnosis and adequate treatment can be promoted.

Dyspareunia in adolescents in particular merits clinical attention and further research. Dyspareunia remains greatly under-investigated, especially in the adolescent population, where sexual activity generally first occurs.

Endometriosis in young women presents more often with noncyclic pelvic pain. This finding is important because it makes the diagnosis of endometriosis more challenging and possibly could be a risk factor for the development of chronic pelvic pain.

Declaration of Competing Interest

F. Siegenthaler received grants for DESI and for ctDNA from the foundation for clinical-experimental cancer research, the SAKK/Dr Paul Janssen Fellowship for ctDNA, and SNF exchange for ctDNA. S. Imboden received consulting fees from Bayer and participated in MSD 2020. All other authors have nothing to disclose.

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