Pelvic Physical Therapy Distance Journal Club
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Predictive model for the non-invasive diagnosis of endometriosis based on clinical parameters.
Konrad L, Fruhmann Berger LM, Maier V, et al. J Clin Med 2023; June 23;12(13):4231.
Doi:10.3390/jcm12134231.

Introduction:
       Women with endometriosis report dysmenorrhea, chronic pelvic pain, chronic non-menstrual pelvic pain and dyspareunia. Currently, diagnosis of endometriosis involves surgery and diagnosis by histological examination. In previous studies, no single parameter reached significance as a prognostic factor, but a constellation of endometriosis-related symptoms seems to be a strong predictor of the disease. To date, preoperative use of questionnaires and predictive models in the diagnosis of endometriosis is scarce.

Aim/Primary Aim: To develop a predictive model for non-invasive diagnosis of endometriosis

Study Design/Study Format: This was a prospective study from 2016-2022 including a total of 269 women with numerous pain symptoms.

Methods: A questionnaire was developed to identify general features and determine different aspects of pain. The questionnaires were handed out to the patients before the clinic evaluation. The completed questionnaires, clinical examinations, surgical findings and histological diagnoses were collected for data analysis. All women were examined by physical examination, palpation, transvaginal ultrasound to exclude endo and, if suspected deep endo, an MRI was performed. Only patients suffering pain, especially dysmenorrhea, failed medical therapy or infertility were operated on and then histologically examined.

Results:
       General parameters: no correlations, except allergies, were found. A higher percentage of women with endo (compared to women without end) were infertile (33.5% vs 12.4%).
       Dysmenorrhea: The frequency and severity of dysmenorrhea were significantly different with women with endo at 97.2% vs without endo at 73.9%. Pain severity was significantly higher in women with endo and pain was longer in duration compared to women without the disease.
       Chronic pelvic pain and dysuria: 46.3% of women with endo have CPP vs 20.7% without endo. Pain severity was about 2 times higher in cases with endo. Significantly more women with endo has dysuria (32.2%) vs those without endo (4.3%).
       Bowel issues: 46.9% of women with endo had pain with defecation vs 15.2% of women without endo. Severe constipation (obstipation) was noted in 40.1% of women with endo vs 15.2% without endo.
       Dyspareunia: 58.8% of women with endo had dyspareunia vs 28.3% without endo. Pain scores were also higher in women with endo vs those without.
       Other pain parameters: Cramping, pulling, tearing, stinging, pulsatile burning and touch sensitivity all showed a significant correlation with endo.

Pain localization: Pain was localized by a significantly higher proportion of patients with endo in the lower back, lower abdomen, thighs/lower extremities and hips/groin compared to cases without endo.

Discussion:

30 significant parameters and 5 NRS (numeric rating scale) scores were associated with endometriosis in this study. Women with endo experienced a higher number of significant parameters compared to women without endo. The authors created a decision tree.

No single parameter but instead pain patterns are highly predictive of endometriosis. Women with endo do not experience different pain but have more pain than women without endo on a monthly basis.

Pain descriptors of cramping, tearing or pulling was noted specifically in women with endo.

Pain with urination was overwhelming more common in women with endo and this parameter was used in the predictive model.

The strength of this study is the extensive evaluation of many parameters and the fact that all women underwent physical evaluation, palpation, TVUS and MRI (in some cases).

The presented prediction model will not only enable the pre-operative and non-invasive diagnosis of endo but can also be used by both patients and clinicians for the surveillance of the disease before and after an operation. With the questionnaire, it will be possible to divide patients in advance into those who need immediate help and those who only need active monitoring.

Conclusion/Summary: Several distinct pain patterns are highly predictive of endometriosis. This study demonstrates that the pre-operative diagnosis of endo based upon questionnaires is possible and underscores that we should never underestimate the patient's pain. Physicians should always consider endometriosis as a possible cause of severe period pain, which should be treated immediately.

Clinical Application

In my experience in treating chronic pelvic pain, patients who have an actual diagnosis respond much better to treatment just by having a clear diagnosis.