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Progesterone Receptor Status Predicts Response to Progestin Therapy in Endometriosis.
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Abstract

CONTEXT: Progestin-based therapy is the first-line treatment for managing endometriosis-associated pain. However, response to progestins is currently variable and unpredictable. Predictive markers for response to progestin-based therapy would allow for a personalized approach to endometriosis treatment.

OBJECTIVE: We hypothesize that progesterone receptor (PR) levels in endometriotic lesions determine response to progestin-based therapy.

DESIGN: Retrospective cohort study.

SETTING: Academic center.

PATIENTS: Fifty-two subjects with histologically confirmed endometriosis, and a previous documented response to hormonal therapy were included.

INTERVENTIONS: Immunohistochemistry (IHC) was performed on sections of endometriotic lesions using a rabbit polyclonal IgG for detection of PR-A/B.

MAIN OUTCOME MEASURES: The Histo (H)-score was used for quantifying PR status. Response to progestin-based therapies was determined from review of the electronic medical record.

RESULTS: H-score was higher in responders compared to non-responders. Subjects were categorized into three groups: high (H-score > 80, n=7), medium (H-score 6-80, n=28) and low (H-score ≤5, n=17) PR status. The threshold of PR >80 was associated with a 100% positive predictive value. The threshold of PR <5 was associated with a 94% negative predictive value.

CONCLUSION: Progesterone receptor status is strongly associated with response to progestin-based therapy. Receptor status in endometriosis could be used to tailor hormonal-based regimens after surgery, and negate trialing progestin-based therapy to determine resistance. Ascertainment of PR status may allow for a novel, targeted, precision approach to treating endometriosis.