EFFICACY OF N-ACETYLCYSTEINE ON ENDOMETRIOSIS-RELATED PAIN AND FERTILITY OUTCOMES: A PROSPECTIVE SINGLE COHORT STUDY

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INTRODUCTION

Endometriosis is a chronic, estrogen-dependent, inflammatory disease, characterized by the presence of endometrial glands and stroma outside the uterine cavity. Pivotal symptoms of endometriosis are dysmenorrhea, dyspareunia and chronic pelvic pain (CPP), associated with infertility in 20%-50% of cases. Besides the usual medical treatment, recent evidence suggests potential benefits of quarterly oral N-acetylcysteine (NAC) 600mg, 3 tablets / day for 3 consecutive days of the week, on endometriotic lesions and pain.
The primary objective of this prospective single cohort study was to confirm the effectiveness of NAC in reducing endometriosis-related pain and size of endometriomas. The secondary objective was to assess a potential role of NAC in the improvement of Ca125 serum levels and fertility outcomes.

MATERIALS AND METHODS

Patients of 18-45 years old, with clinical/histological diagnosis of endometriosis and with no current hormonal treatment or pregnancy, occurred to the Endometriosis and Chronic Pelvic Pain outpatient Service of Policlinico Umberto I University Hospital in Rome, were included in the study. All patients signed the informed consent and were prescribed quarterly oral NAC 600mg, 3 tablets/day for 3 consecutive days of the week. At baseline (t0) and after 3 months (t3), dysmenorrhea, dyspareunia and CPP were assessed using the Visual Analogic Scale (VAS), while size of endometriomas was estimated through a transvaginal ultrasound performed by the same expert gynecologist. Analgesics (NSAIDs) intake, serum levels of Ca125 and desire for pregnancy were also investigated. Finally, pregnancy rate among patients with reproductive desire was evaluated within 6 months of starting therapy.

RESULTS

Hundred-twenty patients with endometriosis were included in the study. Intensity of dysmenorrhea, dyspareunia and CPP significantly improved ($p<0.0001$). Use of NSAIDs ($p=0.001$), size of endometriomas ($p=0.01$) and serum levels of Ca125 ($p=0.001$) significantly decreased. Among the 52 patients with reproductive desire, 39 successfully achieved pregnancy within 6 months of starting therapy ($p=0.001$).

CONCLUSIONS

Oral NAC improves endometriosis related pain and size of endometriomas. Furthermore, it decreases Ca125 serum levels and promotes fertility.