Endometriosis is a complex, enigmatic disease, affecting young women in their reproductive age. Many theories tried to describe its pathogenesis and mechanisms of development and invasiveness, however, no single theory could explain all aspects of this pathology. Women suffering from this disease usually present with peri-menstrual pelvic pain, sub-fertility or both symptoms. Endometriosis is now considered a social disease for its negative impact on the quality of life, treatment costs and work productivity of the patients.

Diagnosis and treatment of endometriosis represent a real challenge. There is an important delay in diagnosis with all the consequences on the patient, or the couple. Medical treatment is not cytoreductive and is associated with recurrence after stopping therapy. In this context, combined oral contraceptives (COC) represent one of the valid options in terms of cost and tolerability. Endometriosis surgery, especially deep infiltrating endometriosis (DIE), is complex and can be associated with peri-operative morbidity and frequent recurrence.

The integration between medical and surgical modalities is now getting accepted by many endometriosis experts. Evaluation of the extent of endometriosis excision and how far the surgery for endometriosis has to be radical, and the impact of this type of surgery on the patient’s quality of life is a matter of investigation. Non invasive diagnosis of endometriosis and its follow up after therapy is a priority for endometriosis research.

The main emphasis of this thesis is to investigate certain aspects in the clinical management of endometriosis. We aim to explore the following:

We conducted two randomized controlled trials (Chapter 2 and 3) to evaluate cyclic and continuous administration of COC in preventing ovarian endometrioma recurrence/endometriosis-related pain relapse after laparoscopic cystectomy. From the results of these trials, we concluded that long-term COC postoperative treatment significantly reduced pain and endometrioma recurrence rates.

In Chapter 4 we retrospectively assessed the effect of pre-operative COC use in patients with posterior DIE. Results of this study demonstrated that COC can have a role in restraining the progression of dysmenorrhea and dyspareunia and the growth of deep endometriotic nodules. To investigate the correlation between histological pattern and clinical outcomes in patients undergoing segmental bowel resection for colorectal endometriosis, we conducted a study described in Chapter 5. We showed that the presence of satellite lesions or positive resection margins does not seem to influence clinical outcomes of segmental colorectal resection. Similarly, satellite lesions don’t appear to have a major role in determining preoperative clinical presentation. From our results we could speculate that an adequate resection of the bowel segment containing the main endometriotic lesion can provide the relief of symptoms, with a lower risk of major complications related to radical segmental resection.

In Chapter 6 a prospective study was described that evaluated a cohort of sexually active women, with histologically confirmed DIE, managed by laparoscopy and subsequent COC therapy for 6
months. Patients filled preoperatively and 6-months postoperatively a quality of sexual life questionnaire, the Sexual Health Outcomes in Women Questionnaire (SHOW Q). The results of this study revealed that sexual desire, satisfaction with sex and pelvic problem interference with intercourse were significantly improved after 6 months from laparoscopic excision of DIE combined with postoperative COC therapy.

The effect of surgical treatment of DIE on Quality of life was the investigated topic described in Chapter 7. We performed a prospective cohort study including patients who underwent laparoscopic management of DIE, using the short form 36 (SF-36) questionnaire. Results of this study demonstrated that laparoscopic excision of DIE lesions significantly improves general health and psycho-emotional status at six months from surgery.

In Chapter 8 we tried to quantify the mRNA levels of MMP-3, MMP-9, VEGF and Survivin in peripheral blood and the serum levels of CA-125 and Ca19-9 in women with and without endometriosis and to investigate the performance of these markers to differentiate between ovarian and deep endometriosis. This study showed that a combination of serum and molecular markers could allow a better diagnosis of endometriosis.