**IS EUTOPIC ENDOMETRIUM OF ENDOMETRIOSIS PATIENTS DIFFERENT?**

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**Abstract Body**

Introduction: Endometriosis is a chronic, disease characterized by the presence of endometrial cells at extrauterine sites and associated with chronic pain and infertility. This disease is a highly prevalent disease, presenting in 10–15% of reproductive age women and 25-50% of infertile women. A decade ago I published a manuscript on the role of endometrial sampling [Revel , Obstet Gynecol Surv, 2009, PMID: 19296860]. The role of this abstract is to evaluate the possibility of diagnosing endometriosis by endometrial sampling (pipelle).

Methods; a pubmed search using the keywords 'endometriosis' and 'eutopic endometrium' was performed for the last 10 years. .

Results: a total of 12 manuscripts are included. This reflects 179 patients with endometriosis and 175 controls. In table 1 all manuscripts are listed by order of the number of endometriosis patients (max 29 patients, min 4 patients). In one manuscript [PMID 27023436] the number of patients was not clear and one manuscript is a systematic review [PMID 29463003]. The two papers by Li et al seem to be based on the same patients [PMID 29712562 and 29410629]. All endometrial samples were obtained using pipelle catheter. Endometriosis was proven by laparoscopy in all studies. The methods of analysis included electron microscopy, RT-PCR, MiRNA microarray, ELISA, western blot, methylation, immunofluorescence and liquid chromatography. Some studies reported that there is no difference in the markers examined between endometriosis proven patients and controls. The only markers that appeared in more than one study was COX-2 [PMID 25439837 and 20068324]. MiRNA seem a promising technique as concluded in the systemic review [PMID 29463003]. MiR-9 was aberrant in 2 manuscripts [PMID 26366419 and 19692421].

Conclusion: These findings provide potential biomarkers for semi-invasive diagnosis of endometriosis in clinical practice. The implications of these markers in the pathophysiology and analysis in all stages of endometriosis must be further studied.

**Abstract image**

| author | year | number of endometriosis patients | number of controls | method of analysis | markers | data | country | PMID |
|---|---|---|---|---|---|---|---|---|
| Li | 2018 | 29 | 37 | UHPLC-ESI-HRMS | hypoxanthine<br>L-arginine<br>L-tyrosine<br>leucine<br>lysine<br>inosine<br>omega-3 arachidonic acid<br>guanosine<br>xanthosine<br>lysophosphatidylethanolamine<br>asparagine<br>uric acid | INCREASED<br>hypoxanthine<br>L-arginine<br>L-tyrosine<br>leucine<br>lysine<br>inosine<br>omega-3 arachidonic acid<br>guanosine<br>xanthosine<br>lysophosphatidylethanolamine<br>asparagine<br>DECREASEDuric acid | China | 29712562 |
| Vallve-Juanico | 2017 | 27 | 12 | immunofluorescence | LGR5+ | higher LGR5+ | spain | 28923287 |
| Cho | 2009 | 26 | 21 | RT PCR | COX-2 | increased | Korea | 20068324 |
| Li | 2018 | 21 | 20 | UHPLC-ESI-HRMS | Phosphatidic acid<br>phosphatidyl choline<br>phosphatidyl serine | PA higher in endometriosis | China | 29410629 |
| Laudanski | 2015 | 21 | 25 | MiRNA microarray | MiRNA | miR-9 | Poland | 26366419 |
| Mahdian | 2015 | 20 | 16 | RT PCR<br>ELISA | MIF<br>CD74<br>COX-2 | COX-2 and MIF increased in secretory phase | Iran | 25439837 |
| Newman | 2013 | 20 | 25 | western blot | PGP9.5<br>NGFp75<br>VR1 | no difference | UK | 23820422 |
| Da Broi | 2017 | 6 | 6 | SEM | pinopods | no difference | Brazil | 28173742 |
| Da Broi | 2017 | 5 | 10 | RT PCR | *PGR,*<br>*HBEGF*<br>*ITGAV*<br>*ITGB3*<br>*SPP1* genes | no difference | Brazil | 28837027 |
| Burney | 2009 | 4 | 3 | MiRNA microarray | MiRNA | MIR 9<br>MIR 34 | USA | 19692421 |
| Li | 2017 | | | methylation | CDH1 | higher methylation | China | 27023436 |
| Agrawal | 2018 | | | systematic review | MiRNA | miR-20a | UK | 29463003 |