

Assessment of potentially toxic elements in the peritoneal fluid in patients with ovarian endometrioma, peritoneal endometriosis and deeply infiltrative endometriosis: differences between entities

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INTRODUCTION

Endometriosis (**Fig. 1**) is a chronic gynecological disease affecting up to 7 - 10% of menstruating individuals worldwide. its etiopathogenesis remains largely unknown, with potentially toxic elements (PTEs) being contributors.

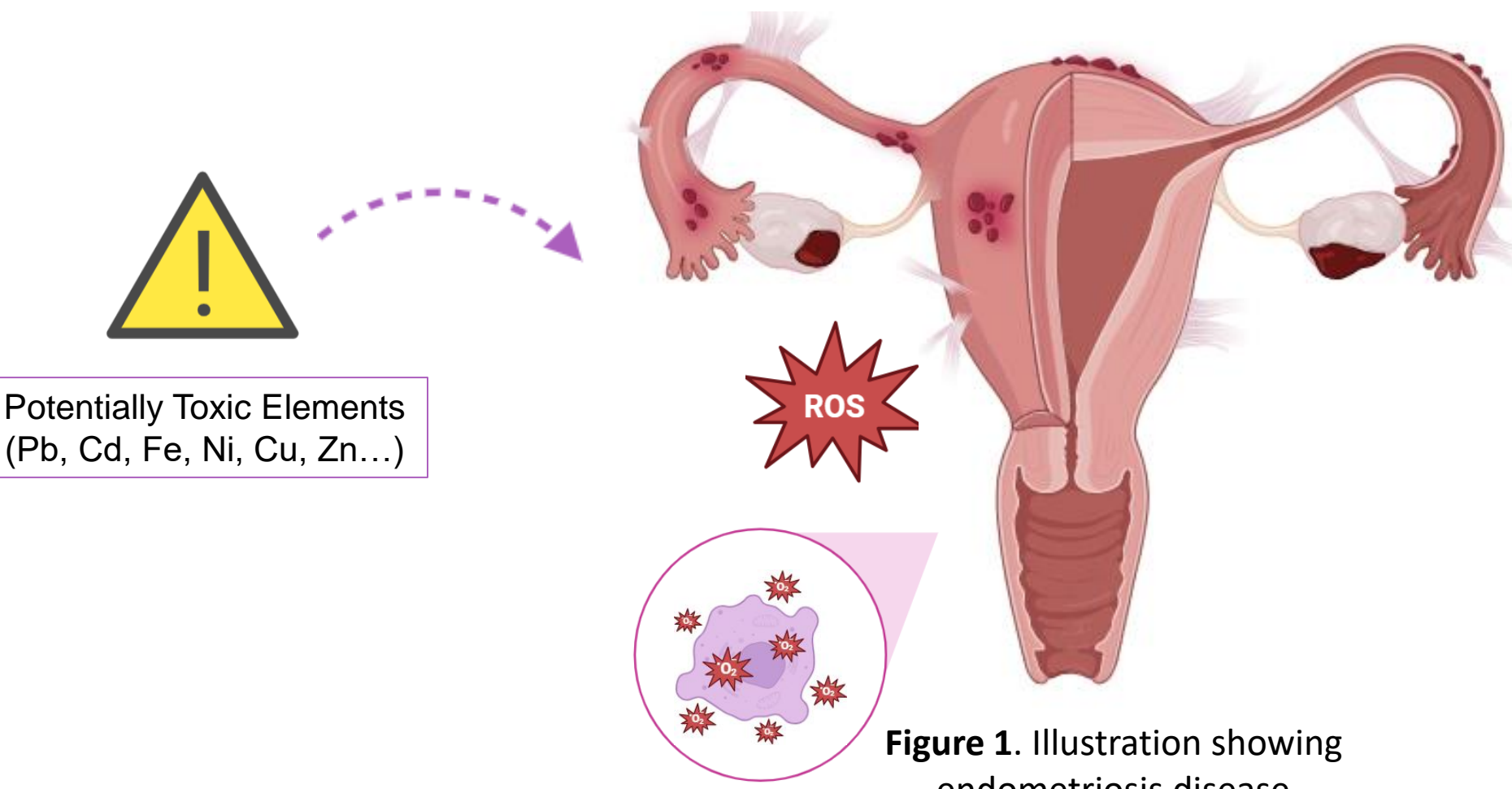


Figure 1. Illustration showing endometriosis disease.

MATERIALS AND METHOD

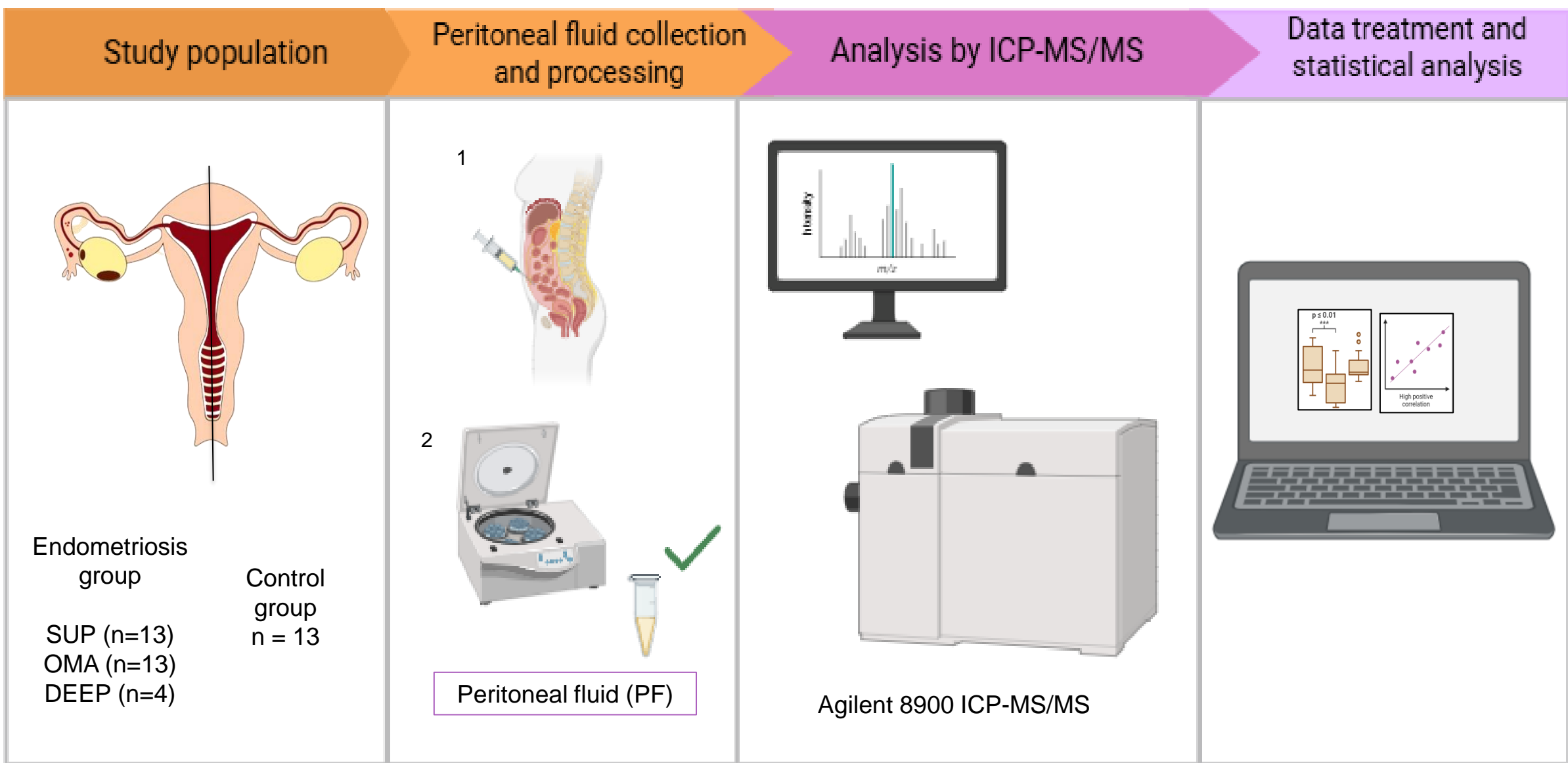


Figure 2. Diagram depicting the steps taken to conduct the research. SUP: superficial peritoneal endometriosis, OMA: ovarian endometrioma, DEEP: deeply infiltrative endometriosis.

RESULTS

Fe concentration was significantly elevated in the OMA group compared to the control group ($p=0.005$), with mean concentrations of $8,172 \pm 13,361$ and $967 \pm 1,524 \mu\text{g L}^{-1}$, respectively. No statistically significant differences were found when comparing the elemental concentrations of SUP and DEEP with those of the control group. When examining elemental ratios (threshold >1.5), elevated levels were observed as follows: Fe and Co were above this value in SUP, OMA, and DEEP; Ba in OMA and SUP; Pb in SUP and DEEP; Cd and Mn in OMA; and finally, Cu and Zn in DEEP (**Fig. 3A**). Distinct patterns of Spearman correlations between elements were identified depending on the specific endometriosis entity (**Fig. 3B**).

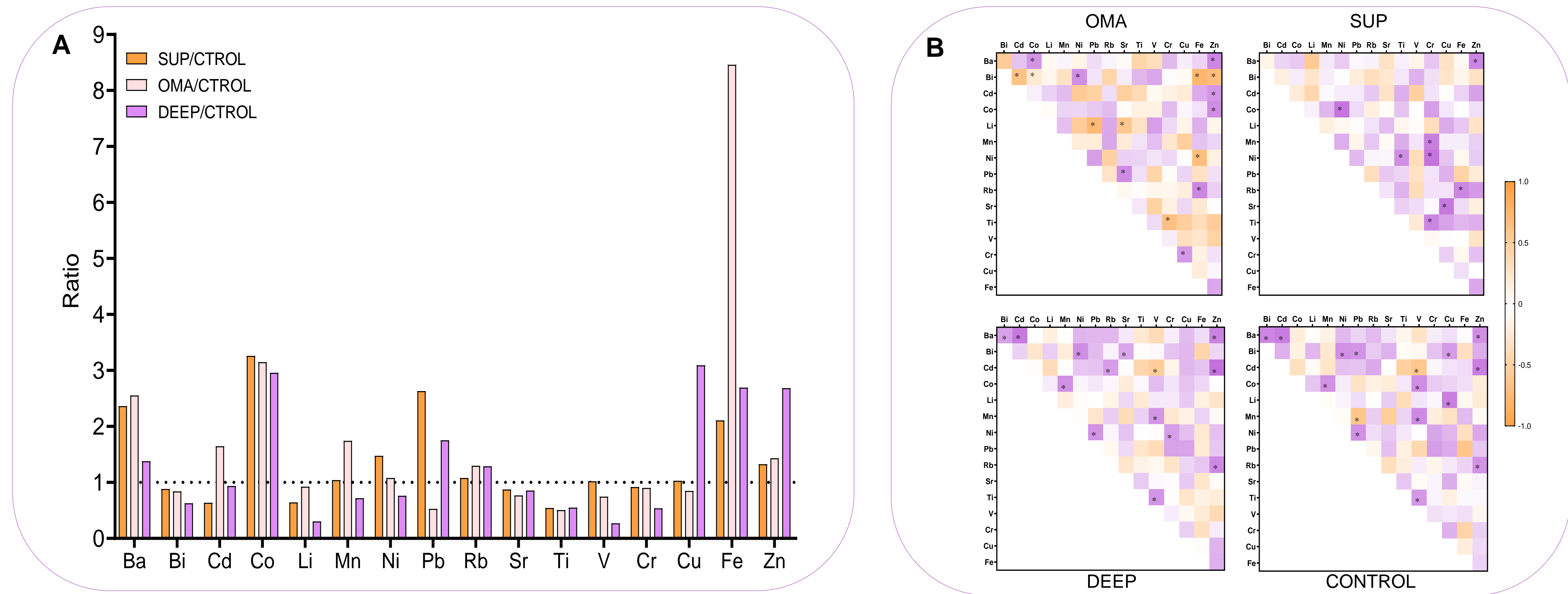


Figure 3. (A) Elemental ratios and (B) Spearman correlations between elements depending on the specific endometriosis entity. SUP: superficial peritoneal endometriosis, OMA: ovarian endometrioma, DEEP: deeply infiltrative endometriosis.

CONCLUSION

These findings suggest that multielemental profiles in PF vary according to specific endometriosis entities.

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