

## Multielemental profile of peritoneal fluid in gynaecology patients presenting uterine myomas

### Introduction

Uterine myomas are benign tumours growing usually in the uterus. It is considered an estrogen-dependent disease which has been associated with an increased expression of estrogen receptor- $\alpha$ . Exposure to endocrine disruptor compounds (EDCs) acting as exogenous estrogens, as cadmium, may be associated with the disease development. The aim of this study was to describe the multielemental profile of peritoneal fluid (PF), including potentially toxic elements (PTEs) and EDCs as Pb and Cd, in women presenting uterine leiomyomas compared to control patients.

### Methods

Ten PF were collected from female patients from the gynaecology division of San Juan de Alicante University Hospital, Spain during laparoscopic surgery for ovarian cysts. PF samples were collected by aspiration into a sterile syringe, filtered through a 20  $\mu\text{m}$  filter, and transferred to a glass centrifuge tube. The supernatants were stored in the dark at  $-20\text{ }^{\circ}\text{C}$  until analysis. The diagnosis of uterine leiomyomas was confirmed prior to surgery with an ultrasonography. Thus, the patients were divided in two groups: leiomyoma ( $n:5$ ), and control group ( $n:5$ ). An Agilent 8900 ICP-MS/MS (Agilent Technologies, Santa Clara, CA, USA) was used to analyse the samples. The clinical history of the patients was investigated to obtain clinical data, and information regarding lifestyle and exposition to PTEs was collected using a questionnaire (RedCap).

### Results

Concerning the elemental profile of PF, some PTEs (Ba, Ni and V) were found in higher concentrations in the leiomyoma group. However, EDCs as Cd and Pb were not quantified in the leiomyoma group.

### Conclusions

The preliminary results of our study show that some PTEs but not EDCs were found in higher concentrations in the PF of women presenting uterine leiomyomas. This report reveals that some PTEs could be involved in the disease development, although additional research is needed to confirm these differences.