Plastics make it to the Follicular Fluid of Poor Ovarian Responders patients undergoing ICSI.

Eman Thabet 1,2,; Nermeen ElDabah2,3; Ola Ahmed4;Raghda Zaghloul3,5.

1. Medical Physiology Department, Alexandria Faculty of Medicine, University of Alexandria, 21500 Alexandria, Egypt.
2. Center of Excellence for Research in Regenerative Medicine and Applications (CERRMA), Faculty of Medicine, Alexandria University, Alexandria 21500, Egypt.
3. Clinical Pathology Department, Alexandria Faculty of Medicine, University of Alexandria, 21500 Alexandria, Egypt.
4. Department of Obstetrics and Gynecology, Alexandria Faculty of Medicine, University of Alexandria, 21500 Alexandria, Egypt.
5. Medical Research Center, Alexandria Faculty of Medicine, University of Alexandria, 21500 Alexandria, Egypt.

Nine to twenty-four % of women undergoing intra cytoplasmic sperm injection (ICSI) do not respond competently to standard ovarian stimulation protocols resulting in a low number of follicles. Folliculogenesis is a complex procedure that involves bidirectional communication between the supporting granulosa cells (GC), oocyte, and follicular fluid.
Follicular fluid provides the microenvironment for oocyte development and intrafollicular communication. Bisphenol A (BPA) is a synthetic estrogen found in polycarbonate plastics. We aimed to discover if BPA concentrations were detectable by HPLC in the human follicular fluid of poor ovarian responders classified according to Bologna criteria. BPA concentrations were then correlated to the AMH and estradiol concentrations, and degree of ovarian responsiveness. We found that BPA levels were detected and correlated with low estradiol and AMH concentrations. Our correlation studies showed that BPA concentrations in follicular fluid significantly affected the follicular microenvironment of oocytes that were collected for ICSI and were directly correlated with poor ovarian responsiveness.