INFLUENCE OF VISCERAL FAT OBESITY ON OOCYTE AND EMBRYO QUALITY

CONTEXT: The influence of the adipose tissue on female fertility is not clear. Actually many studies have been focused on the biochemical composition of follicular fluid and on its relations to BMI and embryo quality in women undergoing assisted reproductive treatment.

THE OBJECTIVES of this study was to evaluate the relation of visceral fat quantity and obesity with inflammatory and reactive oxygen species levels in follicular fluid of women undergoing IVF and oocyte/embryo quality.

METHODS: In this prospective study, patient's informations, fertility outcome data and follicular fluid samples from women undergoing FIVET were obtained.

PATIENTS: Forty four patients were divided into three groups according to their BMI (kg/m2): normal, overweight and obese.

INTERVENTIONS : Ultrasound measurement of preperitoneal fold was used as indicator of visceral adipose tissue quantity. IL-1ß, IL-6, SOD and ROS in follicular fluid were analyzed. All results were correlate with oocyte quantity, quality, embryo quality and fertility treatment outcome.

MAIN OUTCOME MEASURES AND RESULTS: Significant correlations were observed between preperitoneal visceral fat fold and BMI (p= 0,0001), number of previous IVF attempt (p=0,040), gonadotrophins dose used (p=0,014), number of embryos obtained with FIVET (p=0,024), number of embryos transferred in uterus (p= 0,028) and IL-1ß levels (p=0,011). Furthermore significant correlations were obtained between SOD and ROS levels (p=0,009). Negative, but not significant, correlations were noticed between IL-1ß and SOD levels (p= 0,073) and between IL-1ß levels and oocytes quality (p=0,061).

CONCLUSIONS: Adipose tissue, in particular the visceral fat, influence biochemical compositions of follicular fluid and the quality of oocytes and embryos.

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