SUMMARY AND CONCLUSION

The present study included 90 female patients attending obstertics and gynecology departments, Benha University Hospitals, Egypt and Hutzel Hospital, Detroit, Michigan, USA. They were divided into 3 groups. Group I: 30 patients of mild endometriosis, Group II: 30 patients of unexplained infertility and Group III formed of 30 control fertile females. For each patient a full history was taken, and a thorough general abdominal and pelvic examination was done. All infertility factors were evaluated for each patient in the first and second groups. Male fertility was evaluated by complete semen analysis. A postcoital test was performed to exclude cervical factor. A premenstrual endometrial biopsy was taken and examined histo-pathologically for detection of ovarian function. Hysterosalpingography was performed in the proliferative phase for evaluation of uterine and tubal factor. The peritoneal fluid damples were collected during laparoscopy at the proliferative phase of the cycle. PF samples were subjected for estimation of the total protein concentration, detection of different protein bands by SDS – PAGE, qualitativen and quantitative estimation of the cytokine TNF-α by western blotting and ELISA, in addition to study the effect of PF on 2-cell mouse embryos development.

Our results revealed that:

- Total protein concentration showed statistically significant increases in endometriotic group compared to the control and unexplained infertility groups ($P<0.0001$) and ($P<0.05$) respectively. Also total protein level in the unexplained infertility group was significantly higher than the control group ($P< 0.05$).

- There were similar protein bands appeared with SDS-PAGE in the 3 groups, but the number of bands were more in endometriotic group than the unexplained and control groups.

- The endometrial peritoneal fluid 32 kd band appeared in all endometriotic samples and 5/30 cases of unexplained infertility group. It was not present in all the control group.

- TNF-α band was detected by alkaline phosphatase blot on nitrocellulose paper in all cases of endometriosis and unexplained infertility group and some cases of control group .

- The level of cytokine TNF-α by ELISA was higher in endometriosis group (mean 295.33 ± 63.46 pg/ml) than the unexplained infertility group (mean 137.83 ±39.81 pg/ml) and this difference was extremely significant (P<0.000)1. It was also higher than the control group (mean 106.97 ± 20.72 pg/ ml) and the difference was statistically extremely significant (P<0.0001). The level of TNF-α in unexplained infertility group was also extremely higher than the control group (P <0.0001).

- The embryotoxicity of the peritoneal fluid of endometriosis group was significantly higher than the unexplained infertility and control group (P <0.05). Also the embryotoxicity of the PF of unexplained infertility group was singnificanlty higher than the control group (P <0.05).