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Poster Presentations

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The proliferating effect of some herbal plants on human ovarian and testicular cells

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Background: Traditionally, herbal medicine has been used for the improvement of sexual ability and gonadal function. Some plants are recommended for this purpose, which suggested that they can enhance gamete production, regulate sexual cycle and hormones production and ameliorate inflammation. But their mechanisms and probable side effects on gonadal cells, still should be evaluated.

Objective: In the present study, the cytotoxicity effect of some extract from Iranian domestic plants, which are recommended for improvement of gonadal function, also some plants that have anti inflammatory function were evaluated on ovarian and testicular cells.

Materials and Methods: A biopsy of ovary was obtained through an ovariectomy. Also, a small testicular biopsy was received from testicular sperm extraction surgery. After enzymatic digestion, the isolated cells were cultured. The extracts were

prepared from the following herbs: Rosa damascene, Ziziphus jujube, Trachyspermum, Adiantum capillus-veneris, Zingiber officinale, Morus nigra, Ceratonia siliqua, olive page, Aloe vera, Linum usitatissimum, Physalis alkekengi, ginseng, Phoenix dactylifera L, and pomegranate skin. A serial dilution of 8 concentrations was prepared including 2000, 1000, 500, 250, 125, 62.5, 31.25, and 15.62 mg/ml by dissolving in ethanol, Dimethyl sulfoxide and still water. The cells were treated with the following concentrations for 48 h. The cytotoxicity analysis was performed, using the MTT kit.

Results: The MTT analyses on ovarian cells showed that after 48, the extract of Ceratonia siliqua, Phoenix dactylifera L and pomegranate skin could enhance the proliferation of cells, compared to control group. Pomegranate skin caused to higher viability and proliferation, even in higher concentrations. Also, about the testicular cells, Phoenix dactylifera L, Ceratonia siliqua and Adiantum capillus-veneris could stimulated the testicular cells proliferation. As well, it should be mentioned that all of the concentrations of the mentioned extracts were effective on ovarian and testicular cell proliferation, significantly. Other extract had negative effect or no significant effect, compared to control.

Conclusion: We concluded that the in vitro treatment with the mentioned herbs can enhance the proliferation of ovarian and TESE derived cells. So, probably they can be proposed as the herbal drugs for testicular and ovarian cells proliferation and improvement of gonad performance, especially in aged persons and patients with gonad insufficiency. Probably they can be used as stimulator of ovarian and testicular cells in vitro growth, which is useful for assembling an artificial ovary. These data are extracted from a preliminary study and still further investigations are needed to uncover the exact efficacy of these herbs. Also, their oral administration should be evaluated on gonadal function.

Key words: Ovarian cells, Testicular cells, Plant extracts, Cytotoxicity.