

Effect of human follicular fluid on implantation of mouse embryo

Nasr Esfahani M.H. (Ph.D.)¹, Rezai A. (Ph.D.)², Mardani M. (Ph.D.)³, Yousefian E. (M.S.)⁴, Khosravi F. (M.S.)⁵.

1- Assistant Professor, Isfahan Fertility and Infertility Center, Isfahan & Royan Institute, Tehran, Iran.

2- Associate Professor, Immunology Department, Faculty of Medicine, Isfahan Medical Sciences University, Isfahan, Iran.

3- Assistant Professor, Anatomy Department, Faculty of Medicine, Isfahan Medical Sciences University, Isfahan, Iran.

4- Instructor, Nursing Department, Faculty of Nursing, Falavarjan Azad University, Isfahan, Iran.

5- Instructor, Anatomy Department, Faculty of Medical Sciences, Tarbiyat Modares University, Tehran, Iran.

Abstract

Prevention of implantation is considered as one of the suitable methods for contraception or interception. Therefore during this study the effect of human follicular fluid (FF) on mouse implantation was evaluated. The results obtained during this study show that FF contains enzymes and upon incubation with mouse uterine tissue, results in delimitation of epithelium. This effect was inhibited by heat inactivation or addition of EDTA to FF. *In vivo* uterine wash with follicular fluid on days 3,4,5 and 6-post mating prevents implantation and therefore significantly reduces implantation and pregnancy rate. However uterine wash on day 7 post mating with FF had no effect on implantation and pregnancy rate. On day 3,4,5,6 and 7 with Ham's 10 as control had no effect on implantation or pregnancy rate. Addition of EDTA also prevented the *in vivo* effect of FF, suggesting that the active agent present in FF is likely to be a metalloproteinase which inactivates with heat and addition of EDTA. Taking into consideration the fact that FF does not affect the pregnancy of the next cycles, thus the FF or its active agent can be considered as good interceptive agent for prevention of pregnancy rate.

Keywords: Implantation, Metalloproteinases and Follicular fluid.

Corresponding address: Dr.Nasr Esfahani M.H., Isfahan Fertility and Infertility Center, Bozorgmehr street, Salman Farsi street, P.O.Box: 81588, Isfahan, Iran.

Email: nasrmhn@yahoo.com