

## **Adjuvant L-arginine treatment for in-vitro fertilization in poor responder patients**

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Battaglia C, Salvatori M, Maxia N, Petraglia F, Facchinetti F, Volpe A  
Department of Obstetrics and Gynecology University of Modena, Via del Pozzo, 17, 41100 Modena  
Department of Surgical Sciences, University of Udine, Italy.

The objective of the present study was prospectively and randomly to evaluate the role of L-arginine in improving uterine and follicular Doppler flow and in improving ovarian response to gonadotrophin in poor responder women. A total of 34 patients undergoing assisted reproduction was divided in two groups according to different ovarian stimulation protocols: (i) flare-up gonadotrophin-releasing hormone analogue (GnRHa) plus elevated pure follicle stimulating hormone (pFSH)(n = 17); and (ii) flare-up GnRHa plus elevated pFSH plus oral L-arginine (n = 17). During the ovarian stimulation regimen, the patients were submitted to hormonal (oestradiol and growth hormone), ultrasonographic (follicular number and diameter, endometrial thickness) and Doppler (uterine and perifollicular arteries) evaluations. Furthermore, the plasma and follicular fluid concentrations of arginine, citrulline, nitrite/nitrate (NO<sub>2</sub>-/NO<sub>3</sub>-), and insulin-like growth factor-1 (IFG-1) were assayed. All 34 patients completed the study. In the L-arginine treated group a lower cancellation rate, an increased number of oocytes collected, and embryos transferred were observed. In the same group, increased plasma and follicular fluid concentrations of arginine, citrulline, NO<sub>2</sub>-/NO<sub>3</sub>-, and IFG-1 was observed. Significant Doppler flow improvement was obtained in the L-arginine supplemented group. Three pregnancies were registered in these patients. No pregnancies were observed in the other group. It was concluded that oral L-arginine supplementation in poor responder patients may improve ovarian response, endometrial receptivity and pregnancy rate.