

The correlation of the embryo implantation rate with uterine arterial impedance in in vitro fertilization and embryo transfer

簡立維

Chien LW;Tzeng CR;Chang SR;Chen AC

摘要

Abstract

The influence of uterine blood flow impedance on embryo implantation rate was investigated by transvaginal color Doppler sonography examination before embryo transfer. A total of 108 women undergoing in vitro fertilization (IVF) procedures and who had at least one good quality embryo for transfer to the uterus received Doppler evaluation before embryo transfer. Color flow imaging with blood flow waveform analysis from bilateral uterine arteries was obtained to calculate the mean pulsatility index (PI). The correlations between mean PI with the pregnancy rate and the embryo implantation rate (number of embryos implanted/number of embryos transferred) were analyzed. Patients were grouped according to the mean PI value, and the pregnancy rate and embryo implantation rate were 25% (5/20) and 10.7% (9/84), respectively, with a PI < 2.0 (n = 20); 27.5% (14/51) and 12.2% (12/109), respectively, with a PI = 2.00-2.49 (n = 51); 9.5% (2/21) and 3.5% (2/57), respectively, with a PI = 2.50-2.99 (n = 21); and 6.3% (1/16) and 4.3% (2/47), respectively, with a PI [symbol: see text] 3.0 (n = 16). There were no significant differences in either pregnancy rate or embryo implantation rate between the groups with mean PI values less than 2.00 and between 2.00 and 2.49. If a mean PI value of 2.50 was used as the cut-off value, both the pregnancy rate and embryo implantation rate were significantly higher in patients with a mean PI less than 2.50 ($p < 0.05$). The uterine arterial impedance measured by the Doppler sonographic examination is a non-invasive method for evaluating the endometrial response and a mean uterine PI value of 2.5 can be used as a cut-off value to identify optimal uterine receptivity before embryo transfer

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