In vitro fertilization outcome in hypothyroid women in treatment with levothyroxine

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Several reproductive disorders, including impaired ovulation, fertilization, implantation and major risk of miscarriage and late obstetrical complications, have been associated to hypothyroidism. Immune-related forms of hypothyroidism have been reported to be more common in the infertile women than in the general population. The impact of levothyroxine (LT4) treatment on IVF outcome of women affected by sub-clinical hypothyroidism, hypothyroidism and autoimmune hypothyroidism, remains poorly defined. This retrospective study was undertaken to evaluate the potential benefit of LT4 treatment on IVF and pregnancy outcome in 35 women affected by overt autoimmune hypothyroidism, as defined by altered TSH serum value (>4.5 mUI/ml), low FT4 levels and positive levels of thyroid autoantibodies (antithyroglobulin and antithyroid peroxidase). All affected women were treated with LT4 before ovarian stimulation (OS). A group of 109 euthyroid women with comparable age, BMI and basal FSH served as control subject. There were no differences between LT4 treated patients and control group in terms of number of retrieved oocytes (7.08 ± 4.36 vs. 7.69 ± 4.29), number of mature oocytes (5.34 ± 3.17 vs. 6.09 ± 3.48), number of embryo transferred (2.37 ± 0.64 vs. 2.56 ± 0.35), implantation rate (11.11% vs. 15.95%), clinical pregnancy rate (28.57% vs. 26.60%), live birth rate per cycle (20.0% vs. 20.18%) and miscarriage rate (10.0% vs. 24.14%; p=0.617). This study suggests that hypothyroid women treated with LT4 have an IVF outcome that is comparable with the outcome of euthyroid women.