Still no strong evidence that adjunctive treatment with human growth hormone in IVF improves results

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Despite its occasional use as an adjunct in IVF, human growth hormone appears of little benefit to women having difficulty conceiving. Indeed, in an Australian/New Zealand collaborative placebo-controlled randomised trial presented here at the Annual Meeting of ESHRE, live birth rates were no better in poor-responding patients (under the age of 41) given growth hormone as a supplement than in those given placebo.

Most studies on the subject, said investigator Professor Robert Norman from the Robinson Research Institute at the University of Adelaide, and FertilitySA, Australia, "do not address the most important clinical outcome our patients require, that of delivering a live healthy infant", although some studies—many of them small—do reflect a trend towards improved clinical pregnancy outcome. A recent Cochrane review found that, while human growth hormone did not improve results in routine IVF, there is "some evidence of increased pregnancy and birth rates in women who are considered 'poor responders' to IVF." The end point of this study in Helsinki is indeed live birth rate, and, despite the suggestions of the smaller studies, there was still no strong evidence found for a growth hormone advantage.

The study, to achieve sufficient statistical power for a strong conclusion, required an enrolment of 390 women recruited from fertility centres in Australia and New Zealand, but after four years only 136 had been recruited—partly because many prospective recruits had bought growth

hormone outside the trial. Those who were recruited all met predefined criteria for poor response—a previous IVF cycle with no more than five eggs collected after maximum stimulation—and each had ovarian stimulation with same previous drug dose.

Results showed a clinical pregnancy rate of 14% in the growth hormone group and 11% per started cycle in the placebo group. There were equal comparisons between the two groups in the number of eggs collected, quality of embryos and duration of treatment. Most patients, as is the norm in Australia, had a single embryo transfer.

Commenting on the results, Professor Norman agreed that they still offer no strong evidence of a real benefit for poor responders in IVF and said that could only be achieved by an "extremely large" randomised trial. Earlier studies which did find a benefit, he added, had smaller numbers, were not placebo-controlled, and had pregnancy and not live birth end points.

The implication of the ESHRE results, said Professor Norman, is still that there is no evidence of a benefit—or lack of benefit—in giving supplementary growth hormone to poor responders in IVF. "If it were cheap," he said, "it might find a place in poor responders, but normal doses cost more than USD 1000."

Poor responders are a "notoriously difficult" group to treat, said Professor Norman, adding that many strategies have been tried—including human growth hormone—but there is no solid evidence that any of them improve live birth rates. He noted that up to 30% of patients who respond poorly to treatment with poor pregnancy rates are over 40 years of age.

More information: Abstract O-082, Monday 4 July 2016, 15.30: A randomised double blind placebo controlled study of recombinant

human growth hormone (r-HGH) on live birth rates in women who are poor responders

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