Cumulative livebirth outcome following treatment with the 'Bondi protocol' in women with repeated reproductive failure and high peripheral blood NK cell levels

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Abstract

Aim

This study assessed the outcome of immune therapy specifically targeted for women with repeated reproductive failure (RRF) and increased peripheral blood natural killer (NK) cell activity.

Method

From 2005-July 2011, empirical use of a peripheral blood NK cell assay in women with RRF identified 238 women with 'high' blood NK levels. Based on clinical and NK cell assessment, 87 were treated with the 'Bondi protocol' (prednisolone 20mg and clexane 20mg daily). Success rates were assessed by live births.

Results

In 87 women (mean age 38), 58 had repeated IVF failure (RIF) (median 6 previous cycles over 4 years) and 29 had repeated miscarriage (RM) (median 6 miscarriages over 2 years). Overall cumulative livebirth rates were 53% (RIF) and 48% (RM). Women <38 years had a significantly higher livebirth rate (73.7%) than those ≥38 years (35.4%). Livebirth rates were highest (85.7%) in younger women with high levels of both NK cell numbers and expression of activation marker CD69. Women who were not successful were more likely to be older or have multiple (≥2) reproductive problems. The majority of RM patients conceived successfully within a year of NK cell testing; 24% were successful in the first treated pregnancy. In the RIF group, 68% of the successful pregnancies occurred in the first 3 treated cycles.

Conclusion

Cumulative livebirth success rates using the Bondi protocol for treatment of high peripheral blood NK cell levels appear to be higher than expected in women with an otherwise poor prognosis. This readily available immune therapy protocol provides a basis for future randomised trials.