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Title:

A report on a two year experience in the recruitment of embryo donors for human stem cell derivation

Authors:

M. Livie¹, S. Brett¹, T. Kelsey², K. Whalley¹, R. Hume³, A. Burchell³, M. Rajkhowa⁴.

¹Ninewells Hospital and Medical School, Assisted Conception Unit, Dundee Scotland, United Kingdom.

²University of St Andrews, School of Computer Science, St Andrews Scotland, United Kingdom.

³University of Dundee, Women & Child Health, Dundee Scotland, United Kingdom.

⁴Ninewells Hospital & Medical School, Assisted Conception Unit, Dundee Scotland, United Kingdom.

Abstract:

Introduction

The ethical derivation of human embryonic stem cell lines is critically dependent on the availability of donated embryos obtained with transparent, informed consent from couples undergoing assisted conception treatment. Spare embryos donated by these couples provide a valuable source for stem cell line generation, and has been supported by legislation and regulatory bodies in the UK.

The aim of this study was to report on a two-year experience in recruiting couples undergoing fresh IVF/ICSI treatment for donation of their spare embryos for human embryonic stem cell derivation

Method

Couples attending a teaching hospital for an assisted conception treatment between January 2005 and November 2007 (excluding July 2006 to April 2007) were sent information regarding embryo research for stem cell derivation. A dedicated research nurse performed counselling and consenting. Demographic and cycle data from patients who agreed to donation were collated.

Results

Information was sent to couples undergoing 1,299 treatment cycles during the study period. Of these, 507 couples indicated an initial interest in receiving further information in their Human Fertilisation and Embryology Authority (HFEA) generic consent form. Three hundred and eighty (75%) of these couples then agreed to meet the research nurse for further discussion. Of these 68% (260/380) consented to participate in the study i.e. 51% (260/507) of those showing initial interest went on to consent to donate spare embryos. The consenting process was completed prior to oocyte recovery in the treatment cycle.

The average age of female partners who consented to donate was 34 years, and male partners 37 years. The majority of couples (70%) had primary subfertility with an average duration of 4 years. Forty-seven percent of donors were self-funding their treatment while 53% were funded by the National Health Service, These figures reflect the pattern of funding within the Unit. The Carstairs Score (a tool used to determine social deprivation) ranged from -5.8 to 9.22 (the normal range is from -7 to 16; a higher number indicates increased social deprivation).

62% of couples that consented to donation were undergoing IVF treatment, and 38% ICSI. The number of attempts at treatment ranged from 1 to 8, the average being 1.6 attempts, with 62% donating in their first treatment cycle, and 16 and 9% in the second and third. Nine of the twenty-nine couples (31%) who had consented to donating embryos the first attempt, donated in their subsequent attempt. Couples who had decided not to participate in the study during the first treatment were not approached during subsequent visits. Of the consented couples, 40% finally had spare embryos donated to the study.

The total number of embryos created from these patients was 1,345, of which, after using for their own treatment and cryopreservation, 499 (37%) embryos were donated to research. Two hundred and thirty two (46%) of these went on to develop blastocysts for further studies including stem cell derivation.

Conclusion

Half the number of couples that show an interest in embryo research will consent to donating spare embryos for human stem cell derivation. Of these, 80% will finally have spare embryos suitable for donation. Seventeen percent of donated embryos develop to blastocyst stage with potential for generation of stem cell lines. Social class, nature of subfertility and the treatment funding do not appear to influence willingness to donate. Couples undergoing assisted conception treatment will consider research when adequately counselled by dedicated staff.