Donor Recruitment and Compensation

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Outline of Presentation

- Changes in Donor Insemination
- Why is there a shortage of sperm donors?
- Consequences of changes in regulation
- How can we improve donor recruitment?
- Donor compensation
- How can we reduce attrition of donors?
- Conclusions

Donor Insemination (DI)

Indications:
- Severe male factor infertility
- Others: serious genetic conditions, rhesus disease, BBV
- Social infertility: single woman, lesbian couples

Outcomes:

Cumulative live delivery rate after DI:

De Bruckler et al., Hum Reprod. 2009; 24: 8: 1891-1899
Decline in use of DI

HFEA 2007 (facts and figures), www.HFEA.gov.uk

Treatment Cycles with DI at Ninewells ACU

DI CYCLES 1991 - 2009

Changes in profile of patients receiving DI

- Decrease heterosexual couples
- More same sex/single woman

Potential Unmet demand for using DI

Number of treatment cycles (number of patients) using donated sperm in UK since 2000

<table>
<thead>
<tr>
<th>Treatment</th>
<th>2000</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural DI</td>
<td>4926</td>
<td>3578</td>
<td>2325</td>
</tr>
<tr>
<td>Stimulated DI</td>
<td>3248</td>
<td>2271</td>
<td>1749</td>
</tr>
<tr>
<td>IVF (DI)</td>
<td>979</td>
<td>1023</td>
<td>878</td>
</tr>
<tr>
<td>Total</td>
<td>9153</td>
<td>6872</td>
<td>4949</td>
</tr>
</tbody>
</table>

HFEA 2007 (facts and figures), www.HFEA.gov.uk

Possible reasons for not accessing treatment: local rationing decisions, availability of treatment, waiting times, costs, choice of donor, anonymity of donor

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How many donors do we need?

Estimated Number Donors needed:
- If we assume 5000 request treatment, 40% live birth rate with resultant 2000 live births pa:
  - if no choice in donors = 200
  - choice (factor: X6 for ethnic origin, screening) =1200

There is a significant shortage in number of sperm donors in UK.

Current number of active sperm donors in UK (2008): 354

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Why is there a shortage of sperm donors?: Removal of Anonymity

- declined donor recruitment in the run up to removal of anonymity seen in many countries

HFEA 2007 (facts and figures), www.HFEA.gov.uk
Compensation of Donors

- Restriction on financial incentives was introduced in many countries as felt to be inappropriate motivation
- 1998 HFEA: £15 payment per sample and 'reasonable expenses'
- 2005 SEED review:
  - reasonable expenses (loss earnings up to £55.19/day, max. £250 per course)
  - Benefits in kind (discounted treatment)

Consequences of Changes in Regulation: Recruitment Patterns

UK survey in 2006:
- 86% of clinics difficulty recruiting donors
- 86% increased cost treatment
- 75% increased waiting times
- 9% clinics withdrawn DI

British Fertility Society survey July 2006
Reassuringly recent HFEA Data (2007) shows a 6% increase in men registering as sperm donors in UK.

But...
- 40% of DI treatment localised in London (HFEA 2007)
- Patients travelling overseas for treatment (avoid waiting lists, anonymous, donor selection, costs)
- Since 2004 internet services providing delivery fresh semen to home
- Increase in Commercial Sperm Banks marketing on-line (select from donor catalogue)

Rise in importation of sperm from outside the UK

Number of donors with a UK residential address compared to those with an overseas address, 2005-2008

HFEA 2007 (facts and figures), www.HFEA.gov.uk
Increased cost non-anonymous sperm

Cryos (New York) Price list July 2009

<table>
<thead>
<tr>
<th>Motile sperm/straw</th>
<th>Anonymous (IUI washed)</th>
<th>Non-anonymous (IUI washed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 to 5 million</td>
<td>$100</td>
<td>$200</td>
</tr>
<tr>
<td>5 to 9.5 million</td>
<td>$200</td>
<td>$300</td>
</tr>
<tr>
<td>10 to 15 million</td>
<td>$400</td>
<td>$500</td>
</tr>
<tr>
<td>15 to 20 million</td>
<td>$600</td>
<td>$700</td>
</tr>
<tr>
<td>20 to 25 million</td>
<td>$800</td>
<td>$900</td>
</tr>
<tr>
<td>+ 25 million</td>
<td>$1,000</td>
<td>$1,100</td>
</tr>
</tbody>
</table>

Possible reasons for increased price: difficulty recruitment, cost counselling, increased cost administration

Changes in Characteristics of Sperm Donors

In 1994-1995:
- 32% of sperm donors were under 30 years (most common aged group 28 - 34)
- 26% of sperm donors already have children of their own.
In 2004-05:
- 65% were aged over 30 years (most common age group is 36-40)
- 40% already have children of their own, with 30% having two or more children
(HFEA data (October 2005))

Other issues:
- possible increase number of homosexual men seeking to become sperm donors (25% current sperm donors in Dundee)
- many donors only prepared to donate to known recipients

How can we improve number of sperm donors?

<table>
<thead>
<tr>
<th>Maximum number of families from single donor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
</tr>
<tr>
<td>Sweden</td>
</tr>
<tr>
<td>Switzerland</td>
</tr>
<tr>
<td>New Zealand</td>
</tr>
<tr>
<td>Netherlands</td>
</tr>
<tr>
<td>France</td>
</tr>
<tr>
<td>Austria</td>
</tr>
<tr>
<td>Finland</td>
</tr>
<tr>
<td>NSW and Western Australia</td>
</tr>
<tr>
<td>Victoria, Australia</td>
</tr>
<tr>
<td>Norway</td>
</tr>
</tbody>
</table>

HFEA: authority Paper – sperm, egg and embryo donation, December 2008
Changing threshold for acceptance of donors

**Age:**
- Increase age associated with risk of abnormalities in offspring
- BFS suggested increasing age limit to 50 years (current UK guidelines 40 years)

**Semen Quality:**
- Semen quality is critical for success
- CECOS data showing double fecundity if number motile sperm per straw increases from 5 to 10 million motile
- Minimum of WHO criteria (but best if in top 20%)
- Previously fathered children

There is a fine balance between optimal outcome and donor recruitment

Donor choice

Offer patients choice in donor characteristics:
- Appropriate to allow patient/couples to match, but less important with shift in openness
- CMV status matching (advised if CMV positive donor, can be used in CMV negative recipient if informed consent)

Compensation for Donors

**Arguments for:**
- Increase recruitment
- Avoid exploitation (cost of providing identity, profit to service providers)
- Better donors: younger men, increase social class

Need to consider all stakeholders (child, donor, infertile couple, siblings, clinic, society)

HFEA plans to review aspects of SEED review in 2010: including age limit of donors, 10-family limits and financial compensation

**Arguments against:**
- May compromise safety e.g. conceal information
- Human dignity
Benefits in Kind

Sperm Sharing Schemes: couples requiring IVF, have discount on cost of treatment if man becomes sperm donor

Sperm Exchange schemes: couple requiring oocyte donation have reduced cost/waiting times if become sperm donor (in Italian study proved acceptable to 60%)
Ferraretti et al., Hum Reprod 2006 21(10):2482-2485

Pre-vasectomy men: men attending requesting vasectomy, offered cryopreservation of semen at discounted cost if become sperm donors

Known Donation: infertile couples requiring DI have reduced cost/waiting time if provide their own donor

Attrition of Donors


<table>
<thead>
<tr>
<th>Year</th>
<th>Applicants</th>
<th>Refusal (%)</th>
<th>Recruited</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>120</td>
<td>30%</td>
<td>30</td>
</tr>
<tr>
<td>1996</td>
<td>130</td>
<td>25%</td>
<td>25</td>
</tr>
<tr>
<td>1997</td>
<td>140</td>
<td>30%</td>
<td>30</td>
</tr>
<tr>
<td>1998</td>
<td>150</td>
<td>35%</td>
<td>35</td>
</tr>
<tr>
<td>1999</td>
<td>160</td>
<td>40%</td>
<td>40</td>
</tr>
</tbody>
</table>

Donor Attrition

<table>
<thead>
<tr>
<th>Year</th>
<th>ACU enquiries</th>
<th>ACU appointments</th>
<th>DNA appointments</th>
<th>Not suitable</th>
<th>Recruited</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>26</td>
<td>10</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2006</td>
<td>32</td>
<td>15</td>
<td>4</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>2007</td>
<td>28</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2008</td>
<td>14</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2009</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

86% attrition rate from 10/109 enquires become donors

Source of Enquiry:
ACU: website: 32, ACU poster: 10, BirthTay newsletter: 4
Local: local newspaper: 12, football website: 0
National: newspaper: 30, NGDT: 16, HFEA: 1
How to Reduce Attrition Rates

- Target donors who are likely to be fertile: e.g. men attending antenatal clinic, students, sporting events, family planning clinics, men already donating to research.
- Improve service delivery: service centred on donors' convenience e.g. prompt answering of phone calls, convenient location and opening hours of semen laboratory.

Service Modelling

A national recruitment structure recommended by BFS with a hub and spoke model.

Pilot scheme funded by Department of Health at St Mary's Hospital, Manchester 2010-2011: includes
- Advertising campaign focused on sporting events.
- Larger hospital (hub) responsible for coordination and management.
- Local hospitals (spokes) donors provide samples and provide infertility treatment.

Conclusions

- Shortage of sperm donors needs to be addressed.
- Consider methods to enhance donors recruitment (targeting those likely to be fertile, changes in regulation, threshold for acceptance, benefits in kind).
- Reduce attrition of donors (improved donor service).
- Nation recruitment structure may produce benefits.

Thanks to staff from Ninewells Hospital and Medical School including: Anne McConnell and Chris Barratt.