Fertility preservation in cancer patients: practices from the experts and from WH Summit delegates

Prof. Milton Leong, MD

Prof. Zeev Shoham

IVF-Worldwide.com
Fertility preservation: .... Why?

- Increase incidence of cancer during the reproductive age
- Survival and cure rates of cancer are improving
- One of 1000 adults is a survivor of childhood cancer
- Technology is improving!

Pretreatment fertility counseling and fertility preservation improve quality of life in reproductive age women with cancer

Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California San Francisco School of Medicine, San Francisco, California
Cancer 2011

Receiving specialized counseling about reproductive loss and pursuing fertility preservation is associated with greater QOL for survivors
The patient pathway

1. Diagnosis
2. Develop treatment plan
3. Assess fertility risk
4. Discuss impact of cancer and treatment on reproductive health
5. Patient interested in fertility preservation?
   - Yes: Proceed with treatment
   - No: Discuss fertility preservation options

For patients interested in fertility preservation:
1. Refer to reproductive specialist
2. Discuss fertility preservation options
3. Pursue fertility preservation option
4. Proceed with treatment
IVF-Worldwide

- Surveys
- Blogs / Forums
- Social media
- Physicians consulting physicians
- Online Journal
- Online Informed Consent
- Virtual University
- Education Center
- Newsletters
- Clinic Locator


• Minimizing the Risk of Infection and Bleeding at Trans-Vaginal Ultrasound-Guided Ovum Pick-up: Results of a Prospective Web-Based World-Wide Survey. J Obstet Gynaecol India. 2015 ;65(6):389-95.


• Embryo catheter loading and embryo culture techniques: results of a worldwide web-based survey Journal of Assisted Reproduction and Genetics, 2014;8;1029-36

• Luteal phase support in ART treatments Human Fertility, Methods in Molecular Biology Volume 1154, 2014, pp 251-260

• Worldwide survey of IVF practices: trigger, retrieval and embryo transfer techniques Archives of Gynecology and Obstetrics, September 2014:290;561-568

• Characterizing the practice of oocyte donation: a web-based international survey Reproductive BioMedicine Online, 2014:4;443–450

• Luteal-phase support in assisted reproduction treatment: real-life practices reported worldwide by an updated website-based survey Reproductive BioMedicine Online, 2014:28:443–450

• Luteal-phase ovarian stimulation is feasible for producing competent oocytes in women undergoing in vitro fertilization/intracytoplasmic sperm injection treatment, with optimal pregnancy outcomes in frozen-thawed embryo transfer cycles Fertility and Sterility, 2014:101;105–111


• How to recognize PCOS: results of a web-based survey at IVF-worldwide.com Reproductive BioMedicine Online 2013:26;500–505

IVF providers
Hemato-oncologists

Support by Teva Pharmaceuticals
## Survey participants

<table>
<thead>
<tr>
<th>Continent</th>
<th>IVF units</th>
<th>%</th>
<th>Oncologists</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA &amp; Canada</td>
<td>53</td>
<td>17.1</td>
<td>13</td>
<td>9.85</td>
</tr>
<tr>
<td>South America</td>
<td>39</td>
<td>12.58</td>
<td>3</td>
<td>2.27</td>
</tr>
<tr>
<td>Australia &amp; New Zealand</td>
<td>13</td>
<td>4.19</td>
<td>3</td>
<td>2.27</td>
</tr>
<tr>
<td>Asia</td>
<td>58</td>
<td>18.71</td>
<td>17</td>
<td>12.88</td>
</tr>
<tr>
<td>Europe</td>
<td>138</td>
<td>44.52</td>
<td>94</td>
<td>71.21</td>
</tr>
<tr>
<td>Africa</td>
<td>9</td>
<td>2.9</td>
<td>2</td>
<td>1.52</td>
</tr>
<tr>
<td>TOTAL</td>
<td>310</td>
<td>100</td>
<td>132</td>
<td>100</td>
</tr>
</tbody>
</table>

Corresponding to 517,600 cycles
Do you perform treatment for fertility preservation for cancer patients or do you refer patients to other treatment centers?

<table>
<thead>
<tr>
<th></th>
<th>We perform the treatment</th>
<th>We refer the patient to other centers</th>
<th>We do not have fertility preservation patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>unit</td>
<td>86</td>
<td>9.3</td>
<td>4.7</td>
</tr>
<tr>
<td>cycle</td>
<td>87.6</td>
<td>6.7</td>
<td>5.8</td>
</tr>
</tbody>
</table>
Q2: Cancer patients who consult for fertility preservation:

- Are referred mostly by oncologists: 74%
- Are not referred by oncologists: they seek advice on their own: 19%
- Our unit does not treat oncofertility patient: 7%
Statement: Fertility preservation is a high priority for me to discuss with newly diagnosed cancer patients.
Q3: Does the oncologist sufficiently address / inform patients about fertility after cancer treatment?

In case of risk of infertility do you inform your patients?

**IVF specialists**

- Yes: 24%
- No: 63%
- Do not know: 13%

**Hemato-oncologists**

- Yes, I do: 86%
- Yes by my team: 11%
- I leave it to the IVF team: 2%
Q4: To your opinion, is there any age limit to the fertility preservation procedure?

![Graph showing the percentage of IVF specialists and Hemato-oncologists' opinions on age limits for fertility preservation.]

- **None**: 16% (IVF), 23% (Hemato-oncologists)
- **Up to 35**: 25% (IVF), 14% (Hemato-oncologists)
- **Up to 37**: 32% (IVF), 16% (Hemato-oncologists)
- **Up to 40**: 26% (IVF), 26% (Hemato-oncologists)
- **Up to 42**: 19% (IVF), 22% (Hemato-oncologists)
Of your young female cancer patients (≤ 40 years old) who underwent treatment that may have adversely affected their future fertility, what is the percentage who actually benefited from a fertility preservation procedure?
Q5: Who typically pays for fertility preservation treatment for cancer patients?

- Patient of family: 60% (IVF specialists), 30% (Hemato-oncologists)
- Government/Social security program: 27% (IVF specialists), 51% (Hemato-oncologists)
- Insurance: 8% (IVF specialists), 10% (Hemato-oncologists)
- Others or don't know: 5% (IVF specialists), 10% (Hemato-oncologists)
Q6: In patients with malignant hematological diseases, when do you start fertility preservation treatment?

- **Immediately**: 72%
- **Wait for the follicular phase**: 14%
- **Start in the luteal phase**: 3%
- **Our unit does treat oncofertility patients**: 12%
Q7: In the case in which you use a GnRH antagonist protocol for fertility preservation in cancer patients, do you trigger with an agonist?

IVF specialists

- **Yes**: 74%
- **No**: 15%
- **Our unit does use GnRH antagonist**: 2%
- **Our unit does treat oncofertility patients**: 9%
Q8: How many cryopreserved oocytes would be sufficient for you to recommend that further treatment cycles are not necessary?

IVF specialists

- 3-5: 6%
- 6-10: 16%
- 11-15: >11%
- More than 15: 37%
- I don't have experience in this field: 8%
Q9: Statement - Cryopreservation of ovarian tissue is still an experimental procedure

IVF specialists

Yes: 53%
Neither agree nor disagree: 21%
Disagree: 26%
Q10: Statement - The success rate of fertility preservation is not yet good enough to make it an available option.
Q11: Were there pregnancies in your center in the following situations? (multiple answers allowed)

- From frozen embryos: 57%
- From cryopreserved oocytes: 36%
- From transplanted ovaries: 10%
- I am not aware of any pregnancies: 18%
- No pregnancies: 17%
Q12: The pregnancy rate after oocyte cryopreservation in cancer patients is not yet known because

- Not enough patients: 44%
- Oocytes ability to be fertilized is impaired: 4%
- There is no proper registry: 43%
- Other reasons: 9%
Q13: Statement - Treating the primary cancer is more important than fertility preservation

IVF specialists

Hemato-oncologists

<table>
<thead>
<tr>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>46%</td>
<td>34%</td>
<td>20%</td>
</tr>
<tr>
<td>53%</td>
<td>36%</td>
<td>11%</td>
</tr>
</tbody>
</table>
Q14: Do you think that hormonal treatment for fertility preservation can aggravate the malignant disease?

- Yes: 11
- No: 61
- I don’t know: 28

Hemato-oncologists
Q15: In your country, are there any local/national guidelines on fertility preservation for cancer patients?

- Yes: 43% (IVF specialists), 31% (Hemato-oncologists)
- No: 52% (IVF specialists), 48% (Hemato-oncologists)
- I don't know: 5% (IVF specialists), 20% (Hemato-oncologists)
Q16: Statement - National guidelines on fertility preservation for cancer patients are useful/needed

<table>
<thead>
<tr>
<th></th>
<th>IVF specialists</th>
<th>Hemato-oncologists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>89%</td>
<td>92%</td>
</tr>
<tr>
<td>No</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Disagree</td>
<td>4%</td>
<td>2%</td>
</tr>
</tbody>
</table>
Conclusions of the existing survey

• In general, IVF units are comfortable with the cryopreservation techniques
• Physicians would appreciate guidelines and standardization.
• Education would be much appreciated.
• The gynecologists think that the oncologists should be more aware to fertility preservation.
• We are offering the option but the results are not yet known.
• Bias of survey – answered by units performing the procedure