ABSTRACT

Some couples require assistance to conceive and may need to undergo treatments such as In-Vitro Fertilisation (IVF) and Artificial Insemination. These treatments are collectively known as Assisted Conception Procedures (ACP). This paper focuses on IVF, one of the more expensive forms of ACP treatment, and provides information on its charges and success rates in Singapore.

ASSISTED CONCEPTION PROCEDURES

The causes of infertility vary. Hence, there are many different medical treatments to help bring about a pregnancy. These are known collectively as Assisted Conception Procedures (ACP) and include treatments such as In-Vitro Fertilisation (IVF), Gamete Intrafallopian Transfer (GIFT), and Artificial Insemination.

a) **In-Vitro fertilisation (IVF):** Following stimulation of the ovary, eggs are recovered and the eggs are mixed with a man’s sperm in a laboratory dish. Fertilisation occurs in the laboratory, and the resulting embryos (up to three) are subsequently transplanted into the woman’s body. Excess embryos are frozen for later use. A special type of IVF is Intracytoplasmic sperm injection (ICSI), in which a single sperm is injected directly into a single egg in the laboratory and the resulting embryo is transplanted into the woman’s body.

b) **Gamete intrafallopian transfer (GIFT):** The GIFT procedure is similar to IVF except that fertilization takes place in the woman’s body, instead of in the laboratory.

c) **Artificial Insemination:** The man’s sperm is injected artificially into the woman’s body.

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Depending on the cause of infertility, the doctor would recommend the most appropriate treatment to help the woman conceive. IVF is a more invasive procedure that is usually adopted only after other simpler treatments have failed. The risks of IVF include side effects from medication and higher likelihood of multiple pregnancies with its attendant complications (such as premature births, long-term hospitalisation of mother and babies, and developmental problems related to prematurity). IVF is also more expensive.

**IVF TREATMENTS IN SINGAPORE**

In 2002, 1,569 couples underwent IVF treatments. The majority (around 70%) sought treatment in the public hospitals (see Figure 1).

**Figure 1: Couples who Sought IVF Treatments in Different Institutions in 2002**

*The Centre for Assisted Reproduction Pte Ltd (CAREPL) only opened in November 2002.*

**Charges for IVF Treatment**

The average charge for IVF treatment ranged from $6,000 to $13,000 (see Table 1).

**Table 1: Average Charge for IVF Treatment (Stimulated²) Per Cycle in 2002**

² In a stimulated IVF cycle, fertility drugs are given to encourage egg production and the eggs retrieved from the patient before the conception process begins. Alternatively, for a thawed IVF cycle,
In general, the average success rate\(^3\) of IVF treatment ranged from 16% to 28% across the various institutions (see Table 2).

### Table 2: Average Success Rate of IVF Treatment (Stimulated) in 2002

<table>
<thead>
<tr>
<th>Institution</th>
<th>Average Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre for Assisted Reproduction (CAREPL)</td>
<td>N.A.</td>
</tr>
<tr>
<td>Gleneagles Hospital</td>
<td>28%</td>
</tr>
<tr>
<td>KK Women’s &amp; Children’s Hospital</td>
<td>25%</td>
</tr>
<tr>
<td>Mount Elizabeth Hospital</td>
<td>25%</td>
</tr>
<tr>
<td>National University Hospital</td>
<td>26%</td>
</tr>
<tr>
<td>Singapore General Hospital</td>
<td>16%</td>
</tr>
<tr>
<td>Thomson Medical Centre</td>
<td>19%</td>
</tr>
</tbody>
</table>

Note: The success rates are calculated from data submitted by the institutions. (Success rate for CAREPL is not reported because of limited data). These figures should be interpreted carefully, as success rates vary for many reasons including patient-specific factors that may be beyond the control of the institution. Interested parties should contact the institutions directly to discuss their patient selection criteria, which may differ across institutions.

Similar experience is recorded in other countries. For example, the average national success rate of IVF in the UK and US is around 22%\(^4\) and 27%\(^5\) respectively.

Success rates, however, vary widely across individuals, depending on factors such as the age of the couple and their particular fertility problem. Younger women usually have healthier eggs and higher success rates, while those who have undergone more than one previous unsuccessful IVF treatment are likely to have lower success rates for their subsequent treatments.

eggs left over from the first stimulated cycle are thawed and used for the conception process without requiring additional egg production and retrieval.

\(^3\) Success rate is defined as the ratio of the number of live births to the total number of stimulated treatment cycles where there were successful embryo transfers.  
\(^4\) Human Fertilisation and Embryology Authority. Facts & Figures. \(<http://www.hfea.gov.uk/PressOffice/Factsandfigures>\)  
Our data show that the success rate falls with each successive treatment cycle, from around 24% in the first and second treatment cycles to around 5% in the fourth and subsequent cycles.

Since fertility as well as the effectiveness of ACP decline with age, couples are encouraged to have their children early.