

## EXPERIENCE FROM FRESH DONOR INSEMINATION

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### SUMMARY

**Fifty seven patients were studied during a three year period from October 1985 to October 1988. The success rate for 6 cycles has been 64.10%. 80.76% of these conceptions occurred in first three months and 96% in next six months. So a minimum period of six months should be adequate time for the procedure. The maximum conception age was between 20-29 years and after 30 years the success rate drops down. Cervical mucus study for detecting ovulation gave maximum conceptions (88%). There was no apparent difference in conception rate or abortion in those patients who received clomiphene and those who did not receive clomiphene. 88% of babies born were female babies. While following up the failures more than 62% had potent causes of failure indicating proper screening of patient and constant review of their fertility status.**

### Introduction

The first donor insemination in the United States was apparently performed in 1890 by Robert Dickinson. Guttmacher has estimated that, by 1960, AID had resulted in 5,000 to 7,000 births annually.

In spite of the legal, ethical and religious controversies, the last decade has seen a dramatic increase in the demand for AID services. AID has become an established method for treatment of couples with azoospermia and oligospermia.

### Materials and Methods

This prospective study was carried out at

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the Infertility clinic attached to S.A.T. Hospital, Medical College, Trivandrum, Kerala. 57 patients were studied during a three year period from October 1985 to October 1988. During this period the total number of patients enrolled in the Infertility clinic was 370 in 1985, 329 in 1986, 257 in 1987, 345 in 1988 (upto October 1988).

Donor insemination should be offered to couples with uncorrectable azoospermia, oligospermia, asthenospermia or sexual dysfunction. Donor insemination should be offered to the couple only after all other methods of treating the male factor have been exhausted. The couple should have time to adjust to the males infertility and to the concept of AID before treatment is begun.

**Observations**

**I. Age wise distribution and conception rate**

| Age                   | No.57 | %     | No.25<br>conception | %   |
|-----------------------|-------|-------|---------------------|-----|
| Less than 20 years    | Nil   | Nil   | Nil                 | Nil |
| More than 20-24 years | 16    | 28    | 10                  | 40  |
| 25-29 years           | 16    | 28    | 9                   | 36  |
| 30-34 years           | 18    | 31.5  | 5                   | 20  |
| 35-39 years           | 7     | 12.28 | 1                   | 4   |
| More than 40 years    | Nil   | Nil   | Nil                 | Nil |

**II. Seminal profile**

|                             | No. | %     |
|-----------------------------|-----|-------|
| Azoospermia                 | 49  | 85.96 |
| Severe oligospermia         | 5   | 8.77  |
| Asthenospermia              | 2   | 3.50  |
| Necrospermia                | 1   | 1.75  |
| Associated male factors:    |     |       |
| Vasectomy - failed reversal | 11  | 19.29 |
| Post-varicocelectomy        | 5   | 8.77  |
| Paraplegia                  | 1   | 1.75  |
| Endocrine disorder          | 2   | 3.50  |

56% of patients were between 20-29 years and 76% of conceptions were in this group. 31.5% of patients were between 30-34 years and 20% conceptions were in this group. After 35 years there was a decline in conception rate.

Nearly 86% of cases who underwent donor insemination had azoospermia vasectomy including failed reversal accounted for 19.29% of cases.

Cervical mucus study of detecting ovulation has been one of our mainstay in timing insemination and 88% of conceptions occurred in this group.

**III Detection of ovulation and conception rate**

|                        | No. | %     | Conception | %  |
|------------------------|-----|-------|------------|----|
| Basal body temperature | 3   | 5.26  | 0          | 0  |
| Cervical mucus study   | 42  | 73.68 | 22         | 88 |
| Ultrasound scan        | 18  | 31.57 | 3          | 12 |

**IV Pregnancy rate for A.I.D.**

|  |   |        |
|--|---|--------|
| Total number of patients registered for AID      | : | 57     |
| Total number of patients treated regularly       | : | 39     |
| Success rate for those minimum 6 treatment cycle | : | 64.10% |

| No. of cycles | No.25     |       | Percentage | Drop outs |   |
|---------------|-----------|-------|------------|-----------|---|
|               | conceived |       |            | No.       | % |
| 1st           | 8         | 32    | 8          | 14.03     |   |
| 2nd           | 7         | 28    | 3          | 5.26      |   |
| 3rd           | 6         | 24    | 4          | 7.01      |   |
| 4th           | 3         | 12    | 2          | 3.50      |   |
| 5th           | -         | -     | -          | -         |   |
| 6th           | -         | -     | 1          | 1.75      |   |
| 7th           | -         | -     | -          | -         |   |
| 8th           | 1         | 4     | -          | -         |   |
| 9th           | -         | -     | -          | -         |   |
| 10th          | -         | -     | -          | -         |   |
|               | 25        | 43.85 | 18         | 31.57     |   |

Among the 57 patients registered over three years, there were 18 dropouts within first six months. 21 conceptions (80.76%) occurred within the first 3 months. However at the end of six months, 24 conceptions (96%) had occurred out of 39 patients. The success rate at end of 6 treatment cycle being 64.10% (25) out of 39 patients.

Among the 25 pregnancies 32% of the total conceptions were recorded by the first cycle of insemination and another 28% by the second cycle. After the third cycle (24%), the slope for

occurrence of pregnancy gradually diminished. The major peak of success is by first 3 months by which time 80.76% of those who would have conceived would have done so.

Clomiphene was given in regulating ovulation in cases of women over 30 years and ovulation induction. In cases of an ovulation 48% of pregnant patients had received clomiphene, while 52% of patients had not received it. The abortion rate in clomiphene group was 4%, statistically not significant.

**TABLE V**

|           | Clomiphene regulated |    | AID-follow up in pregnant patients |     |     |
|-----------|----------------------|----|------------------------------------|-----|-----|
|           | Conception           | %  | Abortions                          | No. | %   |
| Given     | 12                   | 48 | First Trimester                    | 1   | 4   |
|           |                      |    | Second Trimester                   | Nil | Nil |
| Not given | 13                   | 52 |                                    |     |     |

TABLE VI  
Pregnancy outcome

|  | No. | %  |
|--|-----|----|
| Abortions: First Trimester             | 1   | 4  |
| Second Trimester                       | Nil | -  |
| Full term delivery                     | 14  | 56 |
| Normal                                 | 9   | 36 |
| L.S.C.S.                               | 5   | 20 |
| Continuing                             | 7   | 28 |
| First Trimester                        | 3   | 12 |
| Second Trimester                       | 3   | 12 |
| Third Trimester                        | 1   | 4  |
| Details of pregnancy outcome not known | 3   | 12 |
| Other pregnancy complications          | Nil |    |

We had only one abortion (4%) in the first Trimester. 14 cases (56%) had full term delivery. LSCS was done in 5 patients (20%). 7 cases (28%) are continuing the pregnancy. 3 patients (12%) whose pregnancies were confirmed opted for delivery elsewhere.

TABLE VII  
Sex of babies born - A.I.D. Group

|        | No. | %  |
|--------|-----|----|
| Male   | 3   | 12 |
| Female | 22  | 88 |

Female babies were born in 88% of conceptions, while male babies were born in 12% of conceptions.

Follow up of failures - 8 cases by Laparoscopy

|               |   |
|---------------|---|
| P.I.D.        | 2 |
| Endometriosis | 2 |
| Fibroid       | 1 |

Laparoscopic evaluation of failures of donor insemination was done in 8 cases. 5 patients (62%) had pelvic factor attributing to infertility.

Discussion

A number of series dealing with success rates with donor insemination puts the figure after three treatment cycles from 59% to 73% and after six cycles from 86% to 95%. A monthly fecundability rate of 16.5% was reported from a study from the University of North Carolina. The conception rate for at least 3 treatment cycles has been 80.76% and for 6 treatment cycles 96%. The success rate for minimum 6 treatment cycles was 64.10%. So a minimum period of 6 months should be the adequate time for the procedure to succeed.

While comparing the age wise distribution and conception rate the maximum conception was between 20-29 years, while after 39 years the pregnancy rate dropped to 30%.

During the initial part of study when cervical mucus only was used to detect ovulation, 88% of conceptions occurred. With ultrasound

monitoring of follicular dimensions the pregnancy rate was only 12%.

Comparing the patients who received clomiphene and who did not receive clomiphene, there was no apparent difference, in conception, abortion or multiple pregnancy.

Another significant point noted in this study was that 88% of babies born were female babies.

The overall success rate was only 43.85%, but excluding the 18 patients who discontinued the treatment before completion of 6 months the corrected pregnancy rate was 64.10%.

While following up the failures more than 62% had potent causes of failure indicating proper screening of patient and constant review of their fertility status.

| Age   | No. |
|-------|-----|
| 25    | 2   |
| 26    | 2   |
| 27    | 3   |
| 28    | 3   |
| 29    | 3   |
| 30    | 3   |
| 31    | 3   |
| 32    | 3   |
| 33    | 3   |
| 34    | 3   |
| 35    | 3   |
| 36    | 3   |
| 37    | 3   |
| 38    | 3   |
| 39    | 3   |
| 40    | 3   |
| 41    | 3   |
| 42    | 3   |
| 43    | 3   |
| 44    | 3   |
| 45    | 3   |
| 46    | 3   |
| 47    | 3   |
| 48    | 3   |
| 49    | 3   |
| 50    | 3   |
| Total | 108 |

| Details of pregnancy outcome not known | No. |
|--|-----|
| First trimester                        | 1   |
| Second trimester                       | 1   |
| Third trimester                        | 1   |
| Total                                  | 3   |
| Continued                              | 105 |
| L.C.C.                                 | 2   |
| Normal                                 | 2   |
| Total delivery                         | 108 |

...laboratory evaluation of failure in about 100 patients was done in 5 cases 2 patients (20%) had failed later although in delivery.

We had only one abortion (4%) in the first trimester. 14 cases (13%) had full term delivery. L.C.C. was done in 2 patients (20%) 3 cases (30%) are continuing the pregnancy. 1 patient (11%) whose pregnancy was confirmed upto 6th delivery date.

TABLE VII  
Sex of babies born - A.L.R. Group

| Sex    | No. | %  |
|--------|-----|----|
| Male   | 7   | 13 |
| Female | 33  | 88 |

A number of cases dealing with women who had been treated with the drug after their treatment with clomiphene and after the cycle from 20 to 30. A monthly monitoring rate of 10.5% was reported from the University of Bonn, Canada. The correlation rate for 4 cases was 100%. The correlation rate for 3 patients was 100%. The correlation rate for 2 patients was 100%. The correlation rate for 1 patient was 100%. The correlation rate for 1 patient was 100%.

Female babies were born in 88% of our patients while male babies were born in 12% of our patients.

| Follow up of failures - 8 cases by 1 pregnancy | No. |
|--|-----|
| P.L.D.   | 2   |
| Rebirth  | 2   |
| Normal   | 4   |

While comparing the age wise distribution and conception rate the maximum conception was between 20-25 years, while after 30 years the pregnancy rate dropped to 30%.

During the initial part of study when cases of pregnancy were not known, 100% of pregnancies occurred. With screening