

RETROSPECTIVE STUDY OF EARLY 0-7 DAYS OUTCOME OF BABIES BORN AFTER ART ASSISTED REPRODUCTIVE TECHNOLOGY

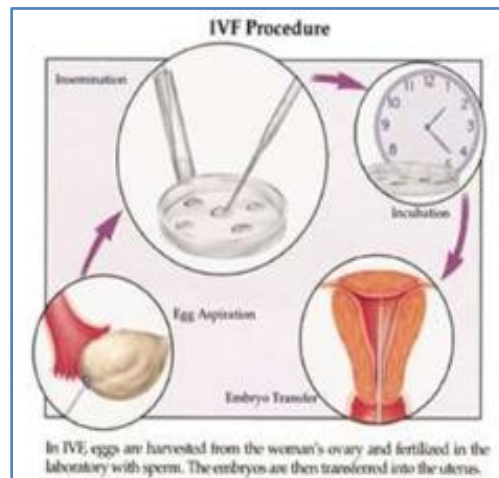
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ABSTRACT: AIM: Retrospective study of early (0-7 days) outcome of babies born after ART (Assisted Reproductive Technology) In vitro fertilization (IVF) is the fertilization of a woman's egg and a man's sperm in a laboratory dish. In vitro means "outside the body." Fertilization means the sperm has attached to and entered the egg. IVF is a form of assisted reproductive technology (ART). This means special medical techniques are used to help a woman become pregnant. There are five basic steps to IVF- Step 1: Stimulation, also called super ovulation, Step 2: Egg retrieval, Step 3: Insemination and Fertilization, Step 4: Embryo culture, Step 5: Embryo transfer. **OBJECTIVE:** To study the early (0-7 days) outcome of babies born after ART (Assisted Reproductive Technology) **METHODS:** This is a retrospective study conducted in Department of Pediatrics, Mahatma Gandhi Medical College & Hospital, Jaipur between Jan 2009- Jan 2010. Inclusion criteria consists of all IVF babies born at Mahatma Gandhi Medical College & Hospital, Jaipur and exclusion criteria consists of all out born babies and IVF babies delivered at another center. **CONCLUSION:** There were 54.28% male and 45.72% female babies. Most of the babies were above 1.5 kg (44.28% NBW +45.71% LBW= 89.99%). There were only 5.71% babies born before 32 weeks of gestation. 61.42% were Singleton. Complication rate was low with Respiratory Distress in 10 babies, Sepsis in 4 babies and Jaundice in 22. All were treated successfully. There was no mortality.

INTRODUCTION: In vitro fertilization (IVF) is the fertilization of a woman's egg and a man's sperm in a laboratory dish. In vitro means "outside the body." Fertilization means the sperm has attached to and entered the egg. IVF is a form of assisted reproductive technology (ART). This means special medical techniques are used to help a woman become pregnant: Step 1: Stimulation, also called super ovulation. Step 2: Egg retrieval, Step. Step 3: Insemination and Fertilization, Step 4: Embryo culture. Step 5: Embryo transfer.

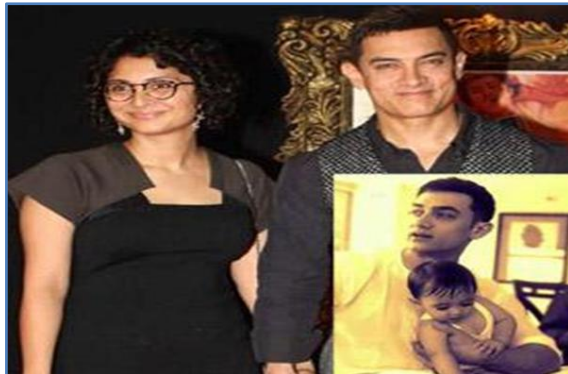


ORIGINAL ARTICLE

World's first successful IVF baby Louise Joy Brown in 1978 by Sir Robert Geoffrey Edwards and Patrick Streptoe.



MOVIE STARS WHO WENT FOR IVF DUE TO ADVANCED MATERNAL AGE:



ORIGINAL ARTICLE

Review: IVF is associated with an increased risk for some neonatal complications, not only among singletons but also among twins.

It is well documented that infants born after ART, even singletons, have a poorer perinatal outcome than spontaneously conceived children. Romundstad et al⁽¹⁾ conducted a sibling analysis comparing birth weight, gestational age and the risk of perinatal mortality in siblings born after ART and spontaneous conception. They concluded that parental stigmata, rather than the technique, was likely to cause the adverse perinatal outcomes among ART children.

The major complication of IVF is the risk of multiple births. This is directly related to the practice of transferring multiple embryos at embryo transfer. Multiple births are related to increased risk of pregnancy loss, obstetrical complications, prematurity and neonatal morbidity with the potential for long term damage.

A double blind, randomised study followed IVF pregnancies that resulted in 73 infants (33 boys and 40 girls) and reported that 8.7% of singleton infants and 54.2% of twins had a birth weight of < 2,500 grams (5.5 lb).⁽²⁾

A review in 2013 came to the result that infants resulting from IVF (with or without ICSI) have a relative risk of birth defects of 1.32 (95% confidence interval 1.24–1.42) compared to naturally conceived infants.⁽³⁾

In 2008, an analysis of the data of the National Birth Defects Study in the US found that certain birth defects were significantly more common in infants conceived through IVF, notably septal heart defects, cleft lip with or without cleft palate, esophageal atresia, and anorectal atresia; the mechanism of causality is unclear.⁽⁴⁾

An IVF-associated incidence of cerebral palsy and neurodevelopmental delay are believed to be related to the confounders of prematurity and low birth weight.⁽⁵⁾

Similarly, an IVF-associated incidence of autism and attention-deficit disorder are believed to be related to confounders of maternal and obstetric factors.⁽⁶⁾

Joseph P Alukal, Dolores J Lamb, et al (7) in 2009 studied that the risk of multiple gestation continues to be of major concern because of its association with low birth weight, preterm delivery and increased perinatal mortality. Other ART outcomes typically includes: 1) Congenital abnormality 2) Developmental delay or abnormality 3) Hormonal dysfunction 4) Epigastric effect.

Bassil KL, et al⁽⁸⁾ in 2012 concluded that in IVF pregnancies, 2% of singleton weigh less than 2.5 kilograms at delivery, in contrast, 30-50% of twins and 92% of triplets weigh less than 2.5 kilograms and 24-31% of triplets weigh less than 1.5 kilograms at birth. In comparison to IVF babies out of the total 75 non IVF babies 27 babies (36%) had normal birth weight. 39 babies (52%) had low birth weight. 6 babies (8%) were very low birth weight and 3 babies (4%) were extremely low birth weight.

MATERIALS & METHODS:

Study location: Mahatma Gandhi Medical College & Hospital, Jaipur.

Study design: Retrospective study.

Study population: IVF babies born in Mahatma Gandhi Hospital.

Study period: Jan 2009- Jan 2010.

Sample size: IVF babies born from Jan 2009- Jan 2010.

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Inclusion criteria: All IVF babies born at Mahatma Gandhi Medical College & Hospital, Jaipur.

Exclusion Criteria: All out born babies, IVF babies delivered at another center.

Observation Tables:

Male	Female	Total
38	32	70
54.28 %	45.72 %	100 %

GENDER DISTRIBUTION OF IVF BABIES

2.5 Kg or >2.5 Kg/ NBW	<2.5 Kg/ LBW	<1.5 Kg/ VLBW	<1 Kg/ ELBW
31	32	7	1
44.28 %	45.71 %	10 %	1.42 %

WEIGHT DISTRIBUTION OF IVF BABIES

GA	< 24 Weeks	26-28 Weeks	28-30 Weeks	30-32 Weeks	32-34 Weeks	34-36 Weeks	36-38 Weeks
Total	1	1	1	1	15	14	37
Male	0	0	1	1	03	09	24
Female	1	1	0	0	12	05	13

DISTRIBUTION OF GESTATIONAL AGE IN IVF BABIES

Singleton	Twins	Triplets
43	12	1
61.42 %	17.14 %	1.42 %

Total	NVD	Forceps	LSCS
52	1	0	51

Showing mode of delivery in IVF babies

Total	Vertex	Breech
75	53	22

Showing Presentation at birth in IVF babies

At 1 min	<3	4-7	8-10
Total	5	2	68

Showing Apgar Score at 1 minute after birth in IVF babies

At 5 min	<3	4-7	8-10
Total	0	3	72

Showing Apgar Score at 5 minutes after birth in IVF babies

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Total	Bag, mask ventilation	Endotracheal intubation, ambu bag
75	5	0
Showing mode of resuscitation done at birth in IVF babies		

Respiratory distress	10	14.28 %
Jaundice	22	31.42 %
Sepsis	04	05.71 %
Seizures	04	05.71%
Complications in IVF Babies		

Day	Diagnosis	Treatment	Outcome
Day 1- 8 Babies	HMD- 3 Babies	CPAP- 7 Babies	Improved- 10 Babies
Day 2- 2 Babies	RDS- 1 Baby	O2 hood- 3 Babies	
	Congenital Pneumonia- 1 Baby		
	TTNB- 1 Baby		
	Unknown- 4 Babies		
Respiratory distress in IVF babies			

Day	Phototherapy	Outcome
Day 2- 1 Baby	Given- 9 Babies	Improved- 22 Babies
Day 3- 11 Babies	Not given- 13 Babies	
Day 4- 5 Babies		
Day 5- 5 Babies		
Jaundice in IVF babies		

Day	Cause	Treatment	Outcome
Day 1- 2 Babies		i.v. antibiotics- all	Improved- 4 Babies
Day 2- 2 Babies			
Sepsis in IVF babies			

Day	Cause	Treatment	Outcome
Day 1- 2 babies	Hypoglycaemia	i.v. Dextrose bolus given	Improved
Day2- 2 babies	Hypocalcemia	i.v. Calcium gluconate given	Improved
Seizures in IVF babies			

CONCLUSION: Mode of delivery was LSCS in 51 mothers, NVD in 1 mother out of 52. Presentation 53 Vertex, 22 Breech. Apgar score at 1 minute after birth <3 was 5, 4-7 was 2, 8-10 was 68. Apgar score at 5 minutes after birth <3 was 0, 4-7 was 3, 8-10 was 72. Mode of resuscitation after birth by bag, mask ventilation in 5 babies, Endotracheal intubation in none. There were 54.28% male and 45.72% female babies. Most of the babies were above 1.5 kg (44.28% NBW +45.71% LBW= 89.99%).

ORIGINAL ARTICLE

There were only 5.71% babies born before 32 weeks of gestation. 61.42% were Singleton. Complication rate was low with Respiratory Distress in 10 babies, Sepsis and Seizures in 4 babies and Jaundice in 22. All were treated successfully. The mean birth weight of IVF babies was 2.20 Kg (Standard Deviation, SD= 0.713). The mean age of mothers who went under IVF was 34.23 Years. There was no mortality.

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