

Bilateral fallopian tube block in hysterosalpingogram: Can sonosalpingography avoid laparoscopy or IVF?

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Introduction

- Hysterosalpingogram (HSG) is the most commonly performed method to evaluate tubal patency in infertile couples.
- Sometimes, spasm of the smooth muscles of the tube leads to the “false” impression of “bilateral tube block” (BTB) in HSG (*Suresh and Narvekar, 2014*)
- When HSG shows BTB, the couple has to choose between laparoscopy and in vitro fertilization (IVF) (*Yetkin Yildirim et al., 2017*)
- Many of these laparoscopy and IVF procedures may seem “unnecessary”, given the chance of false impression in HSG.
- “Can we do some noninvasive test in cases of bilateral tubal block shown in HSG to reduce unnecessary laparoscopy and IVF?”
- Sonosalpingography (SSG) is relatively simple procedure which can assess tubal patency, uterine cavity, myometrium and the ovaries in the same sitting, while avoiding radiation exposure and iodine allergy (*Saunders et al., 2011; Suresh and Narvekar, 2014; Maheux-Lacroix et al. 2014*).

Background

- SSG has been recommended for women diagnosed with bilateral **proximal** tubal block in HSG. (*Hajishattha et al., 2009*)
- The role of SSG in **other types** of tubal block shown in HSG is not known.
- Few authors showed that SSG done after BTB diagnosed in HSG could reduce the number of unnecessary laparoscopy.
- Whether SSG could also reduce the requirement of IVF, has not studied.

Aims and Objectives

Primary Objectives–

- To detect whether SSG can show tubal patency after HSG had shown BTB
- To detect whether SSG can reduce the requirement of laparoscopy and/or IVF

Secondary Objective–

- To find out the pregnancy rates in these women

Materials and Methods

Study Design

- Prospective Cohort Study

Study Setting

- Genome Fertility Centre, Kolkata

Study Duration

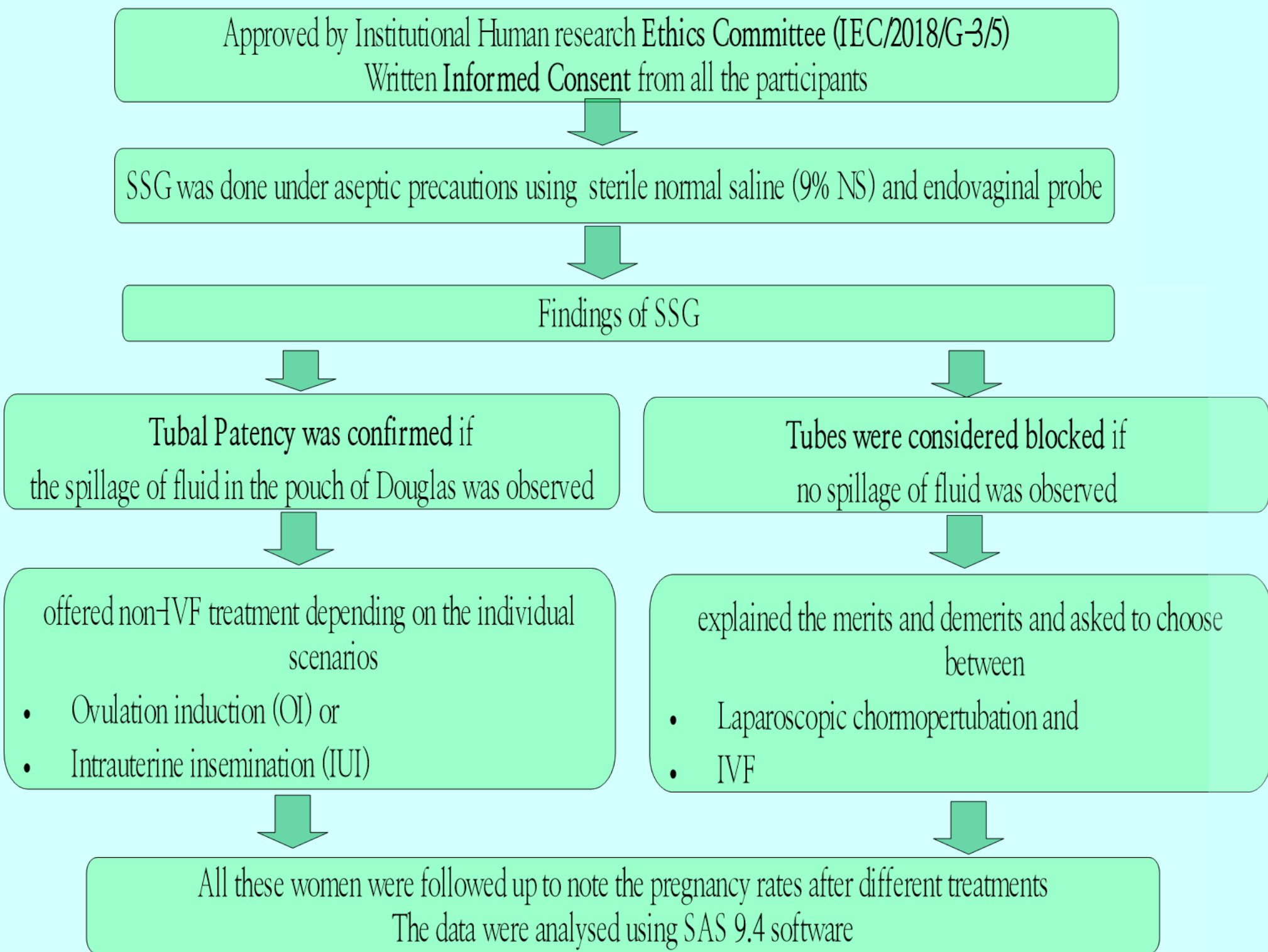
- April 2018 to December 2021

Inclusion Criteria

- Subfertile women diagnosed with BTB in HSG

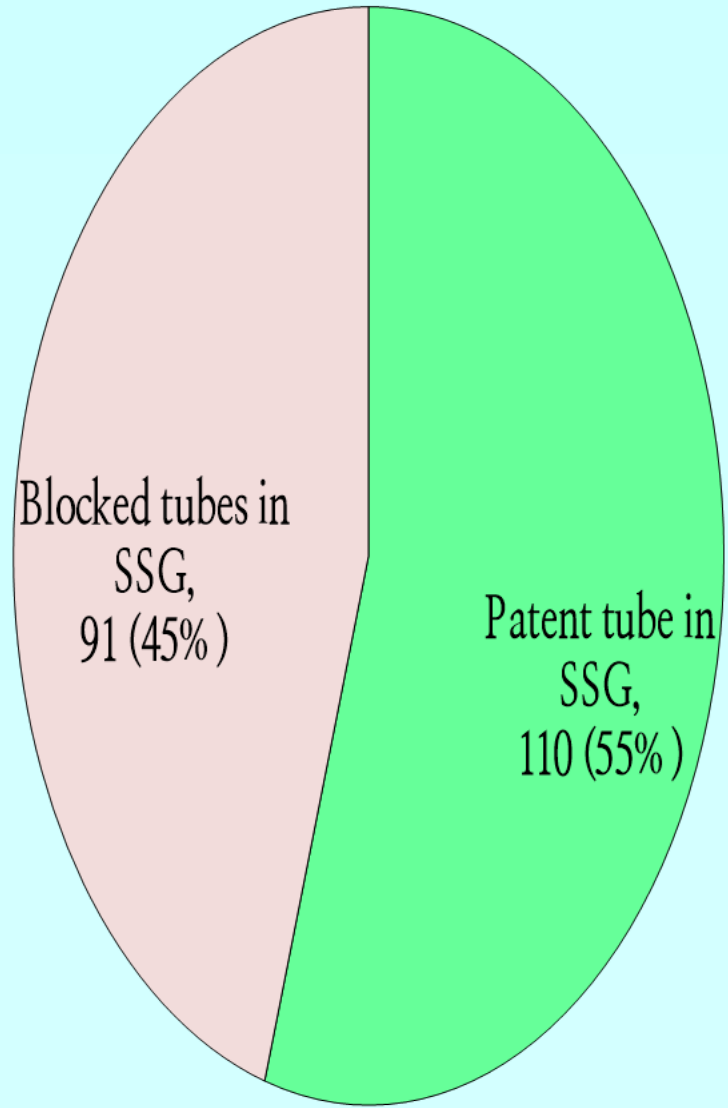
Exclusion Criteria

- Active reproductive tract infections
- Abnormal uterine bleeding
- Suspected Müllerian anomalies
- Any obvious indication for laparoscopy (endometriosis-associated pelvic pain or large ovarian cysts, hydrosalpinx
- Previous tubal sterilization procedure
- Premature ovarian failure (POF)
- Expected poor responders–according to Bologna criteria (age ≥40 years and serum anti Müllerian hormone –AMH (0.5-1.1 ng/ml or antral follicular count-AFC (5-7)
- Requiring IVF (or ICSI) for severe seminal quality defect (total motile sperm count <1 million/ml) in their male partners



Results

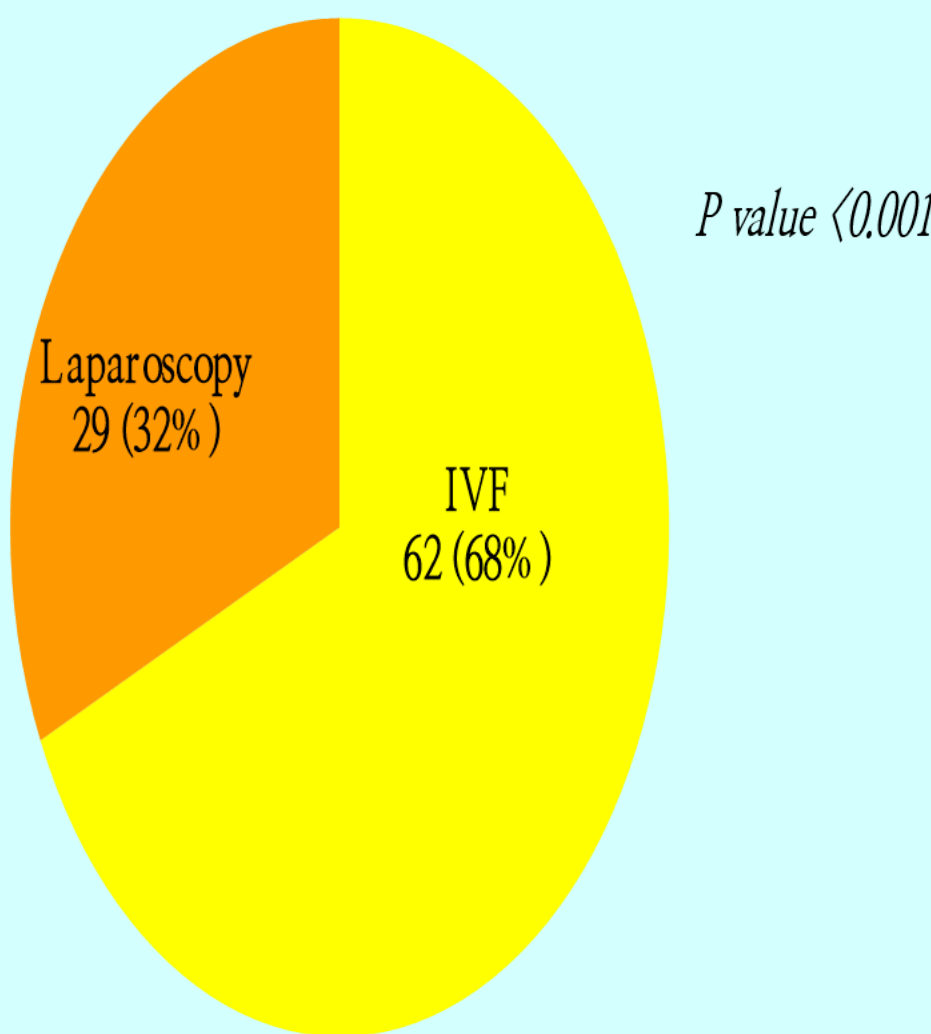
Total number of women with BTB diagnosed in BTB (n=201)



Predictive factors for tubal block in SSG (Multiple logistic regression)

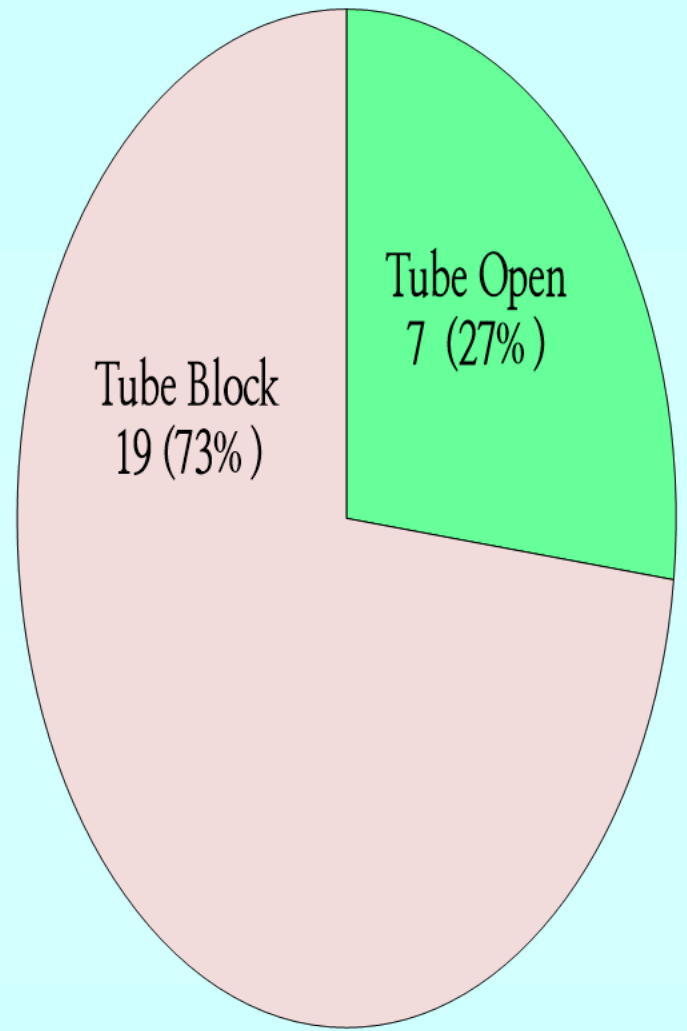
Variables	P value	Interpretation
Age (years)	0.8236	Not significant
Duration of infertility (years)	0.438	Not significant
Previous pregnancy	0.9068	Not significant
Previous ectopic pregnancy	0.6849	Not significant
Cycle regularity	0.6376	Not significant
Pelvic pain	0.7855	Not significant
Previous pelvic surgery	0.6175	Not significant
Type of tube block in HSG (proximal/ distal)	0.722	Not significant

Decision taken after tube block diagnosed in both HSG and SSG (n=91)



Findings in Laparoscopy

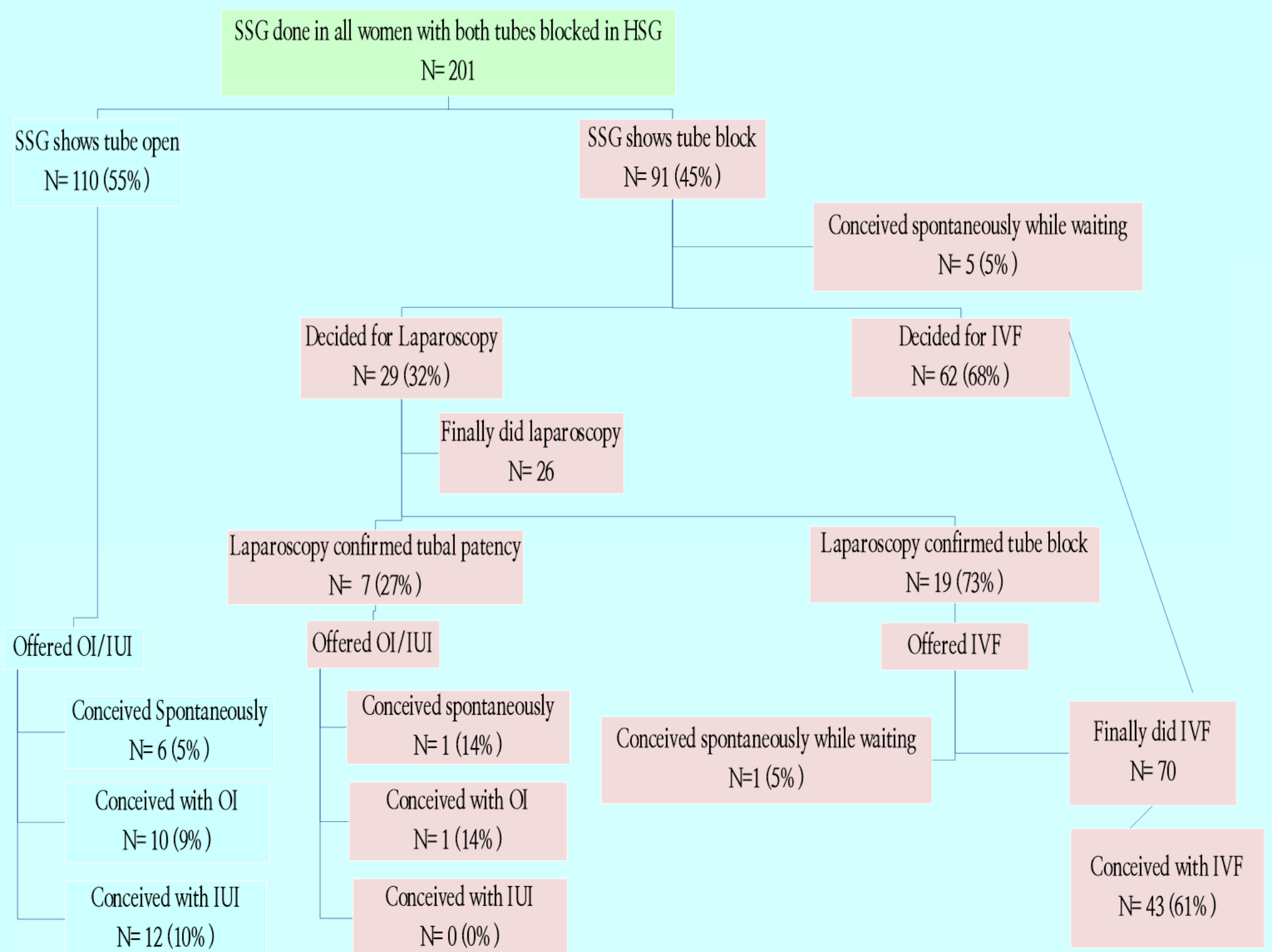
Total number of women underwent laparoscopy n= 26



Pregnancy Rates in women with BTB seen in HSG (n= 201)

Conception spontaneously or by OI/IUI	After tubal patency seen in SSG	28/110 (25%)
	After tubal patency seen in Laparoscopy	2/7 (29%)
Conceived spontaneously	Even after tube block seen in SSG (before Laparoscopy/IVF)	5/91 (5%)
	Even after tube block seen in laparoscopy	1/19 (5%)
Conceived by IVF		43/70 (61%)
All pregnancies were intrauterine		

Findings at a glance



Discussion

- SSG can find tubal patency in 55% cases while HSG showed blocked tubes (70-80% cases, reported by *Hajishattha et al., 2009*)
- SSG can avoid IVF and/or laparoscopy in 55% cases
- No factors can predict the possibility of tubal patency in SSG in these women
- After tube block seen in both HSG and SSG, significantly more number of women opted for IVF rather than laparoscopy
- Financial burden if the couples have to undergo both laparoscopy followed by IVF, especially in country like India where the cost of IVF has to be borne by the individuals.
- If both HSG and SSG showed tube block, laparoscopy will find the same in 73% cases (75% cases, reported by *Hajishattha et al., 2009*)

Conclusion

- All women with HSG-diagnosed BTB should be offered SSG before proceeding for laparoscopy or IVF.
- SSG helped to avoid “unnecessary” laparoscopy and IVF in more than half of the cases.
- If SSG also diagnoses BTB, directly proceeding for IVF may be preferred to laparoscopy.

References

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