DISCUSSION

Tubal factors account for 40-45% female infertility (Ansari, A.H., 1979) out of the total infertile population. Thus, one of the major determinants to be made in every infertility evaluation is whether or not the patient seeking investigations for infertility and subfertility has patent fallopian tube(s).

The present study was thus undertaken to evaluate comparatively, the two main diagnostic methods available at present i.e. hysterosalpingography - an invasive method and sonosalpingography (USG) - a non-invasive method in terms of efficacy and patient compliance.

42 patients, both of primary and secondary infertility were studied by both the methods and the results compared. 61.9% patients were of primary sterility and 38.1% of secondary infertility. These observations are closely consistent with those of Rutherford et al (1949) - primary infertility 62.8% and secondary infertility 37.2%.

In the present study we observed that maximum percentage of cases reported for infertility were between the ages of 25-30 years (76.2%) while very few cases reported after 35 years (4.8%). Most of the patients of primary infertility came to seek investigations within 4 years of their
married life (38.46%) while only 7.69% cases reported after a period of 10 years.

In cases of secondary sterility we observed that maximum number of cases (37.5%) came for investigations within 4 years of last child birth and maximum cases of secondary infertility reported after birth of single child only (62.5%). Two cases (12.5%) of secondary infertility reported who had previous history of recurrent abortions.

According to the present study of 42 cases, 19 cases (42.86%) showed bilaterally blocked tubes on HSG while only 10 cases (23.81%) showed bilaterally blocked tubes on sonosalpingography (USG). Thus, there were 8 such cases (19.05%) who showed patent tubes on USG but bilaterally blocked tubes on HSG.

Unilateral tube patency could not be assessed by USG but HSG revealed this in 10 cases (23.81%). Bilateral tubal patency as assessed by HSG was found in 14 cases (33.33%).

Patency, as assessed by USG (not assessing unilateral or bilateral) was in 32 cases (76.19%).

These findings are in close proximity to the study of Richman, T.S. et al (1984) who studied 35 patients and found :-
<table>
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<th>HSG</th>
<th>USG</th>
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<tr>
<td>Bilateral patency</td>
<td>25 (72.43%)</td>
<td>24 (68.57%)</td>
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<tr>
<td>Bilateral blocked tubes</td>
<td>9 (25.71%)</td>
<td>9 (25.71%)</td>
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False positive was reported in only one case result (2.86%).

According to this study, HSG was taken as the standard technique to evaluate sonosalpingography results. The authors found that ultrasound demonstrated bilateral tubal occlusion with a sensitivity of 100% and showed tubal patency with a specificity of 96%.

In the present study, we came across one patient of gross hydrosalpinx of the right tube with bilateral tubal block on HSG. On USG, patency of the tubes was observed. Similar pitfalls were observed in a study of 24 patients conducted by Rasmussen F et al (1986). Their observations showed tubal patency (both by HSG and USG in 21 patients (87.5%). In rest of the three patients (12.5%), they found either fluid accumulation in peritoneal adhesions, edema of bowel wall or spill of the injected saline into a large hydrosalpinx.

In our study, we observed that HSG was accurate in locating the site and side of tubal occlusion but gave false negative results in 8 patients. This was due to reflex spasm and bilateral occlusion of the tubes seen.
Whereas, the USG was more sensitive in detecting patency of tubes but was not specific in determining the site and side of tubal occlusion.

In a study made by Randolph JP Jr, et al (1986) surgical procedures – laparoscopy/hysteroscopy – were taken as the standard in 61 patients of infertility and then hysterosalpingography and ultrasonography were performed. According to them USG is 100% sensitive (HSG sensitivity is 96%) but only 91% specific (HSG specificity is 94%). They concluded that USG is better for establishing tubal patency but not accurate for establishing which of the tubes is patent.

If we take surgical findings as the standard technique we can also ascertain the sensitivity and specificity of the two procedures i.e. HSG and USG and can compare the results of the two procedures.

In the present study, we observed false negative results on HSG in 8 patients (44.44%). Bilateral tubal block was found in 18 patients on HSG while only 10 patients (55.56%) showed bilateral block on USG. Sharma R.P. (1989) studied 20 patients of bilateral tubal block on HSG. 24 (80%) of these patients showed patent tube(s) on USG while only 8 patients (20%) showed blocked tubes. Thus, according to this study also USG is superior to HSG in determining the patency of
the tubes. While according to the study made by Taoxi M C, et al (1992), there was no significant difference between HSG and USG findings. They found bilateral block on HSG in 34% patients and on USG in 36% patients in a study of 50 cases. But advocate that USG is superior to HSG and laparoscopy in that USG is:

- Non-invasive
- Economical
- Technically simple with less false negative results.
- Can also demonstrate any obvious uterine or ovarian factor in the same sitting.

We observed in our study that during USG examination, that too during fluid injection, only 50% patients complained of severe pain. Similar problem was encountered almost with all patients in the study made by Bonilla Musoles P, et al (1992). In our study, that patients complaining of pain were mainly those who showed blocked tubes. The pain subsided after the procedure without any treatment. While the pain experienced by patients during dye installation during HSG required anti-spasmodic analgesics.