



# Summary and Conclusions



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The present study "Role of Transvaginal colour doppler in cases of primary Infertility as compared with endometrial biopsy" was carried out in the post graduate department of obstetrics and gynaecology, MLB, MC, Jhansi.

A total of 100 cases of primary infertility were studied. The observations are summarized herewith.

- (1) In our study, patients were in the reproductive age group i.e. 18-40 years. Maximum number of cases i.e. 56% belonged to age group 21-25 years.
- (2) Most of the patients in our study belonged to low socio-economic strata. The prevalence of infertility does not differ significantly among racial and ethnic groups. Although, patients seeking treatment for infertility are predominantly of high socio-economic strata; infertility is more common among groups of relatively low socio-economic status (*Novak et al*). Most of the patients in our study (71%) were residing in rural areas.
- (3) According to educational status, most of the cases (59%) were undergraduates, and (29%) were illiterate. Only (7%) of patients were postgraduates. Improved familiarity with, and access to infertility services among the affluent and better-educated patients accounts for their greater use of these medical resources.
- (4) Maximum number of patients (58%) in our study had 1-5 years of period of infertility.

- (5) Out of 100 cases, most of the patients (56%) had normal menstrual cycles. Among rest of the cases, prolonged cycles and irregular cycles were most common, accounting for 11% in each group, and short cycles were present in 6% cases. Few patients also has complaints of dyspareunia, dysmenorrhoea and discharge P/V.
- (6) On clinical examination, uterus was found to be of normal size in 75% cases, hypoplastic in 17% cases, and 8% cases had enlarged or bulky uterus.
- (7) The echotexture of myometrium was homogenous in maximum (98%) cases, which is a normal feature of myometrium. 2% cases who revealed heterogeneous character were found to have fibroid uterus. Myometrial contractions were absent in 56% cases. This quiescent nature of myometrium characterizes secretory phase of menstrual cycle.
- (8) Study of endometrial characters with TVS showed the presence of hyperechoic secretory endometrium in 73% cases. Among the rest, 14% had hypoechoic endometrium, 8% had isoechoic endometrium, and in 5% cases, endometrium was anechoic.
- Endometrial contractions, which in real sense are transmitted myometrial contractions were seen in only 44% cases. In the rest 56%; they were absent, a feature characteristic of secretory transformation.
- Triple-line-appearance, a characteristic feature of early follicular or proliferative phase was seen in only 33% cases.

Normal vascularity inside uterus i.e. cold uterus was seen in 92% cases.

- (9). Thickness of endometrium was variable according to the phase of menstrual cycle. Most of the cases (37%) showed endometrial thickness in the range of (9-12) mm, followed by 34% cases in the range of (6-9) mm. The thickness of endometrium gradually increases in the secretory phase. However, endometrial thickness > 14-16 mm is classified as being hyperplastic.
- (10) On TVS, 65% cases showed that endometrium was in the secretory phase; and 32% cases showed endometrial characteristics of proliferative phase. Among the cases showing secretory transformation, 37% revealed late secretory changes and 28% had early secretory changes.
- (11) Uterine artery doppler flow parameters like RI and PI, as studied with TVS colour doppler revealed that most of the cases (96%) showed resistance index (RI) in the range 0-1.0, which is a normal feature of ovulatory cycles. In anovulatory cycles, a continuous increase in the uterine artery RI has been detected. 92% cases showed Pulsatility index (PI) <3.0, which signifies that uterine artery flow during both systolic and diastolic phases was adequate. Studies of uterine blood flow is a non-invasive assay of uterine receptivity and provides valuable information on the pathophysiology of infertility.
- (12) On histopathology of cases of infertility, normal secretory endometrium was present in 60% cases, and proliferative endometrium in 36% cases. Endometrial hyperplasia was present

other had simple hyperplasia. Two cases revealed tubercular endometritis on histopathology as additional finding.

- (13) On correlating the findings of TVS with histopathology, we found that most of the cases who showed Type I,II endometrium on TVS had proliferative endometrium on histopathology. Out of 59 cases showing secretory changes on histopathology, 56 cases had Type III, or Type IV endometrium, and only 3 cases had Type I endometrium on TVS.
- (14) An additional finding of Tubercular endometritis was reported in 2 cases. Both of them showed secretory transformation on TVS.
- (15) Only 7 cases which were suspected to have secretory changes on TVS had proliferative endometrium on histopathology. Two cases who were reported to have secretory changes on histopathology revealed proliferative endometrium on TVS.
- (16) Transvaginal sonography was helpful in diagnosing 89% cases correctly, whose sonographic findings were well correlated with endometrial pathologies. So, TVS had 89% accuracy. A negative correlation with histopathology was seen in 11% cases.

Thus, we conclude that TVS is an accurate diagnostic tool for cases presenting with primary infertility. It is a non-invasive OPD procedure, not requiring full bladder. In addition to excluding organic lesions and other adenexal pathologies, endometrium can be studied in detail and fairly accurately.

TVS has correlated well with histopathology in diagnosing proliferative or secretory endometrium, endometrial hyperplasia or

atrophy. So it can nearly and accurately replace the invasive check curettage done for diagnostic purposes.

Today, to even think of an infertility unit without the facilities of transvaginal scanning is like walking into dark without a torch.