CONCLUSION

Semen analysis is a keystone in the clinical work up of the infertile male patients when comparing the fertile and infertile population. The result shows that sperm count, motility and morphology are significantly different from the fertile group. However, in the present study infertile group shows higher semen volume than fertile group. This indicates that semen volume is not an important factor in influencing fertility. Hormonal values of fertile and infertile group shows that LH (Luteinizing hormone) and Testosterone are different for the two groups. However, in the present study indicates that there is no significant difference in the FSH values between fertile and infertile group. Increased serum concentration of FSH in the control group is surprising.

The varicocele is a common and relatively simple vascular lesion that has highly variable and individualized effects upon men. Based upon the current data available, there is very strong evidence to support the fact that as observed for centuries, varicocele exert a deleterious effect upon the testis and its function. In the present study concluding that about 14% of patients had undergone varicocele treatment and the semen parameters of these patients
showed that all the semen parameters except semen volume was significantly lower than the fertile group. Hormone values also showed a significant difference from the fertile group. This indicates that varicocele has an increased risk factor for fertility of man.

Studies showed that smoking clearly has a degenerative effect on spermatozoa. Most important, one of the direct effects of smoking that can be qualitatively measured is the production of abnormalities induced on the flagellar structure, which tend to bring about deficiencies in the motility characteristic of the sperm. Studies in humans indicate that cigarette smoke alters levels of hormones that are involved in spermatogenesis. Heavy alcohol use in men is associated with testicular atrophy. This study shows that motility, sperm count and morphology are significantly higher in fertile group than smokers and drinkers. LH values of smokers and drinkers are significantly higher than fertile group whereas FSH values of drinkers and smokers have no significant difference from that of fertile group. Testosterone value of smokers and drinkers is significantly lower than that of fertile group. More research is needed to determine the mechanisms and the extent to which smoking and alcohol acting together affect sperm development.
Heat exposure seems to have a deleterious effect on male fertility and must be considered a significant risk factor for male infertility. In men under normal healthy environmental conditions, the testicular thermoregulation system is certainly able to maintain the normal scrotal hypothermy. In men repeatedly subjected to abnormal situations (such as drivers or workers exposed to high temperature and prolonged sitting position) and perhaps also in men with impaired arterio-venous testicular systems, there may be chronic thermo-dysregulation which may, in turn, result in substantial changes in sperm characteristic such as motility and morphology. Based on the present study it is evident that LH and FSH value of heat exposed group have significantly higher value than fertile group whereas testosterone value is lower than fertile group. Motility, sperm count and morphology are much less in the case of heat exposure group. Environmental factors, particularly exposure to chemicals may contribute to the severity of sperm parameters, and that infertile patients constitute a highly susceptible group. The testicles are one of the most vulnerable organs to environmental physical and chemical agents. In this group of study here also LH and FSH values are significantly higher than fertile group whereas testosterone value is lower than fertile group. Volume is significantly higher in chemical exposure group than other
exposure group. Motility, sperm count and morphology also very low when compared with fertile group. Of which morphology is very much affected in chemical exposure group. Further studies on conclusions required to evaluate male reproductive toxicity of commonly used substances or those that are likely to be in contact with human populations on male fertility.

Separate regression analysis was used to find out the most influencing factor for fertility. The result of the study showed that sperm morphology has more influence on fertility. The second influencing variable is motility.

One of the interesting observation found in the present study was incidence familial infertility among eight families. Further research is needed to find out the genetic mechanism involved in familial incidence of infertility and monomorphic pattern of sperm abnormalities.

It has been established that chromosomal abnormalities, both affecting the sex chromosomes and the autosomes, occur more frequently in infertile male populations compared with newborns. A variety of such irregularities have been described including reciprocal translocations, Robertsonian translocation, paracentric inversions, marker chromosomes and aneuploidy. Klinefelter's
syndrome, the most common chromosomal disorder associated with male infertility, typically occurs as a consequence of a 47, XXY chromosome complement although similar mosaicism has also been reported to manifest the disorder. The frequency of chromosomal aberrations in the present study is 6.9%. Among these constitutional chromosomal aberrations are most dominant among the azoospermic men. These investigations have become more important because male infertility can now be treated by intracytoplasmic sperm injection (ICSI). So the couples selected for artificial reproduction treatment should be counseled on the cause of their infertility and the possible ‘genetic’ risk when ICSI is performed. This study also point to the necessity for further research activities, especially in Andrology and reproductive genetics, to analyse in more detail the causative agents, genetically determined sterility factors at the molecular level and perhaps to correlate numerical and structural aberrations with gene defects.

The present study also point out the necessity of further Research in Andrology and Reproductive Genetics to determine the sterility factors at molecular level and to correlate the numerical and structural abnormalities associated with male sterility.
Bacterial and viral infections are postulated to be important aetiological factors for male infertility. Although the link between infection and male infertility has not yet been established. The role of leucocytes in semen is still poorly understood. Leucocytospermia is normally associated with genital tract infection and or impairment of semen quality. In the present study accessory gland infection was noticed in 39 cases (12.2%) out of 319 patients based on the presence of leucocytes in the semen. In this context, sperm preparation technique employed are applied to reduce viral and bacterial load in the semen fraction used for insemination.

Other factors such as antisperm antibody, iatrogenic factors, erectile dysfunction and hormonal factor have less impact on fertility of men. Among these only 6% of the patient were affected with antisperm antibody, 4.3% cases have iatrogenic factors, and erectile dysfunction was found in 1.3% of the total patients and hypogonadotropic hypogonadism was found in only two cases of the total patients studied.

Therapeutic insemination with husband's semen is one of the principal modalities in contemporary infertility management. Semen or washed sperm has been recommended for a number of reasons for many decades. Recently, intrauterine insemination combined
with controlled ovarian hyperstimulation has been used to improve conception rate in several types of infertility in which conventional management has proved ineffective. In the present study 16% success rate was observed in intrauterine insemination techniques. Among the successful case of intrauterine insemination post wash semen motility was higher (82.5%) and sperm count was between 10-14 millions/ml. This study also indicate that ovarian hyperstimulation has no influence on the success of intrauterine insemination techniques. If success is not obtained, other treatments such as invitro fertilization (IVF), intracytoplasmic sperm injection (ICSI) is advised.