Male infertility rate is very high in this part of our country, Gujarat. The semen analysis done in 652 specimens revealed that 64.02% of them are responsible for childlessness, either alone or along with the partner. The records from the Civil Hospital, Ahmedabad, for 94 months spreading from January 1968 to June 1980 show the incidence of male factor for infertility as 56.67%.

The pathological samples were included in one of the groups: oligozoospermia, azoospermia, oligoasthenozoospermia and asthenozoospermia, as per standard criteria. Separated seminal plasma was used to estimate one or more of the elements like sodium, potassium (flame photometry), zinc, copper and iron (atomic absorption spectrophotometry).

The results of the study were fed to a microcomputer for statistical analysis. A strong correlation of coefficient was seen in normozoospermia and in oligoasthenozoospermia when total sperm count was compared with percentage of sperm motility.

Norms are established for sodium, potassium, zinc, copper and iron in seminal plasma. The necessity of sodium and potassium at an optimum level is seen for the regular activity of the spermatozoa. Statistically significant, an inverse relation exists between these two elements. A correlation between sodium in seminal plasma and percentage of sperm motility is seen in normozoospermia and in oligozoospermia.

The zinc concentration in seminal plasma is found to be important for sperm motility. A direct linear correlation is observed and plotted in the form of regression analysis.
graph between concentration of zinc and percentage of sperm motility in normozoospermia, oligozoospermia, and oligoasthenozoospermia. The probable role of zinc in sperm motility is evaluated.

Except in azoospermia, in all pathological groups, the concentration of copper was high. A significant correlation between copper in seminal plasma and the total sperm count was seen in normozoospermia. This indicates that both these variants are dependants. It also indicates that the more the number of spermatozoa, the less the concentration of copper in seminal plasma. It is accounted for the uptake of copper by spermatozoa. The uptake of copper may probably be an important factor for sperm motility. This element may be responsible for the release of zinc from the spermatozoa.

The present study shows the decrease in concentration of zinc in seminal plasma as a cause of asthenozoospermia. Estimation of copper in seminal plasma indicates the high concentration of copper as a cause of asthenozoospermia. It is likely that in normal cases, copper is exchanged with zinc and in asthenozoospermia, possibly the exchange system is functionless.

The iron concentration in seminal plasma is important for the sperm motility. A decrease or increase in this level may alter the sperm motility.