SUMMARY
Sperm motility is generally recognized as the most important indicator of seminal quality. Abnormal motility as an isolated disorder may exist in 24% of subfertile patients. In these patients acquired or congenital (genetic) lesions of flagellar function are likely. The molarity of these alterations cannot be diagnosed by the ordinary microscope.

There is clear inverse correlation between progressive motility and incidence of sperm locomotor system anomalies, and this indicates that structural alterations are the most important causes of low spermatic motility.

Sperm with poor movement often demonstrates morphological abnormalities at the light microscopic level. In general, sperm with normal morphology possess higher velocity and linear progression than sperm of abnormal morphology.

This study was carried out on ten, infertile patients, were attending infertility clinic in Kaser El-Ainy hospital. Eight of the patients presented with primary infertility, and two with secondary infertility. After seminogram only patients with immotile spermatozoa and sperm count more than 20 million/ml were chosen for this study.

For those patients, semen samples were collected and examined carefully, then, vital staining was carried on to differentiate between viable and dead spermatozoa. Finally, the electron microscopy was used to diagnose any ultrastructural abnormalities in the spermatozoa.

Two normal semen samples were obtained from normal volunteers with no infertility problem, sperm count over 80 million/ml, motility 70%, abnormal form less than 25%, and both had a child below one year.

According to vital staining we divided the patients into two groups. group (A) were the viable cells are more predominant than dead cells, and group (B) were the dead cells are more predominant than viable cells.

Group (A) (Viable spermatozoa)

The commonest head anomalies in this group are deformed head in four cases (80%), Cephalic cytoplasm in one case (20%) and myelin figure like membrane in
two cases (40%), together with separated acrosome in two case (40%), hypoplasia in two cases (40%) and vaculated acrosome in three cases (60%),

Group (B) (dead spermatozoa)

The commonest head anomalies in this group included deformed head in three cases (60%), Myelin figure like membrane in three cases (60%), cephalic cytoplasm in one case (20%), separated head in three cases (60%), together with thick acrosome in two cases (40%), hypoplasia and degenerated acrosome in four cases (80%).

Sperm tail cross section taken from the Ten infertile patients with immotile spermatozoa revealed a variety of fine structural abnormalities.

Degenerated tail was the main feature in group -B- dead spermatozoa which had been seen in all cases (100%), and was the least common (partial degeneration) in group -A viable spermatozoa. Confuse arrangement of microtubules which was the major feature in both groups. Four cases in group -A (80%), three cases in group -B (60%). On the other hand missing of dynein arm was seen in one case in group -A.

Missing of central microtubules in the form of (9+0) was seen in another one patient in group -A. And missing of peripheral microtubules in the form of (6+2), (5+2) was seen in one patient in group -A.

Our results showed that there are high frequency of anomalies that can be diagnosed by TEM, when compared with the anomalies detected by light microscope. Axonemal alterations where, are the main abnormalities detected in all our patients (100%), the majority of these abnormalities can not be diagnosed by ordinary microscope. So this study has demonstrated that large proportion of the patients exhibited a multiple pattern of tail abnormalities. From our results in group (A) we can conclude that vital stains are inconsistent, and we suspect that they are not sufficiently sensitive to detect the early degenerative changes seen by electron microscopy.

We conclude therefore, that detailed electron microscopic study of the semen of infertile patients with immotile spermatozoa enabled us to terminate long months of further investigations and futile therapy,