Twenty eight fertile males whose partners had conceived within one year and having sperm concentration more than 20 million/ml with motility and morphology more than 50% were selected from general population and taken as normospermic control group.

After liquefaction, the seminal plasma was collected after centrifugation at 3000 rpm for 15-20 minutes. The supernatant seminal plasma was transferred in fresh tubes and stored at -20 °C until assay. Seminal Zn and Cu measurements were performed by the electrothermal-atomic absorption spectrometry (AAS) method. The concentration of fructose in seminal plasma was determined with a spectrophotometric method, using the resorsinol method.

Statistical analysis

Descriptive statistics were represented as mean and SE. Statistical differences were analyzed using Independent sample-test when we had 2 groups, but ANOVA was used when we had more than 2 groups. P-values were considered statistically significant ($p < 0.05$). Pearson correlation was used to assess the relationship between studied variables.

Results

Table 1 summarizes the mean (±SEM) value on seminal plasma levels of Fructose, Cu and Zn in the three groups of infertile male subjects (azoospermia, oligozoospermia and asthenozoospermia) and in fertile control group.

The mean (±SEM) value of seminal plasma fructose concentrations was significantly increased in the three groups of infertile male subjects (azoospermia, asthenozoospermia and oligozoospermia) than in fertile males ($p < 0.001$, Table 1). There were no significant differences in seminal plasma Cu concentration between the azoospermia and the oligozoospermia groups of infertile male subjects and in fertile control group (Table 1), but there was significant decrease in seminal plasma Cu concentration between astheno-zoospermia group and control as shown in Table 2. The mean (±SEM) value of seminal plasma Zn concentrations was significantly decreased in the three groups of infertile male subjects (azoospermia, asthenozoospermia and oligozoospermia) than in fertile male (Table 1).

The results of Table 3 appeared positive and significant ($p < 0.001$) correlation between sperm concentration and total progressive motility. Meanwhile, negative weak and non significant ($p > 0.05$) correlations were assessed between sperm concentration and each of fructose and cupper. However, positive weak and non significant ($p > 0.05$) correlations were noticed between total progressive sperm and each of fructose and cupper. On the other hand, zinc appeared positive weak and non significant ($p > 0.05$) correlations with both sperm concentration and total progressive sperm. In contrast, zinc presented negative weak and non significant ($p > 0.05$) correlations with each of fructose and cupper.