Table 3: Pearson Correlation coefficient among studied variables

		Sperm concentration	Total progressive	Fructose	Cu	Zn
Sperm concentration	r	1	0.508	-0.047	-0.237	0.108
	p	0.000	≤ 0.001**	> 0.05^{NS}	> 0.05^{NS}	> 0.05^{NS}
Total progressive	r		1	0.072	0.008	0.073
	p		0.000	> 0.05^{NS}	> 0.05^{NS}	> 0.05^{NS}
Fructose	r			1	0.056	-0.131
	p			0.000	> 0.05^{NS}	> 0.05^{NS}
Cu	r				1	-0.181
	p				0.000	> 0.05^{NS}
Zn	r					1
	p					0.000

NS= no statistical significance p >0.05.
* = statistical significance $p \leq 0.05$*.
** = highly statistical significance $p \leq 0.001$**.

Discussion

The normal function of seminal vesicle is essential for sustaining fertility. Decreased function of seminal vesicle affects the semen coagulation, sperm motility, stability of sperm chromatin, and semen immunoprotection. One of the most important markers for the seminal vesicular function is the concentration of fructose in seminal plasma [18].

The results of the present study showed that there was an inverse relationship between fructose levels and sperm concentration. Similar results have been reported by Manivannan et al [19]. However this finding was conflicting with others [20,21]. The lowest values of seminal fructose presented may be due to the increase of the process of fructolysis. Furthermore, the decrease of fructose concentration was significantly positively correlated with motile sperm concentration [18].

It appears that the abnormal concentrations of this substance are related to disturbances in the secretory activity of the seminal vesicles [22].

In this study, there was a significant low level of seminal plasma zinc levels in oligozoospermic and azoospermic males. Similar results have been reported by Hasan et al [23]. Our results are also incompatible with several studies [24]. A good correlation in a positive direction was noted between the sperm count and seminal plasma zinc concentration. This element has been shown to be highly important for conception, successful implantation and pregnancy outcome [25, 26]. Zinc is present at high concentrations in the seminal fluid and there is evidence that it may act *in vivo* as a scavenger of excessive O^{-2} production by defective spermatozoa and/or leukocytes in semen after ejaculation [27]. There is evidence that zinc plays a vital role in the physiology of spermatozoa and spermatogenesis. Specifically, Bedwal et al reported that shrinkage of seminiferous tubules Zinc is an essential nutritional component. A potential benefit of zinc supplementation for immuno-logical competence is currently widely discussed.

Zinc is present at high concentrations in the seminal fluid, and may play a multifaceted role in sperm functional properties. It has been suggested as being an important anti-inflammatory factor, and also to be involved in sperm oxidative metabolism [29].

A clinical study demonstrated that adult males experimentally deprived of zinc showed a disturbance of testosterone