ABSTRACT

BACKGROUND

DNA damage in spermatozoa is linked to infertility. It is associated with lower fertilization rate, poorer embryo development and reduced implantation rate. DNA fragmentation is strongly correlated with semen parameters such us motility and morphology characteristic. An elevated fraction of progressively motile spermatozoa is important to have a high DNA integrity.

METHODS

A total of 10 normozo- men and 10 asthenozoospermic men were simultaneously processed by density gradient centrifugation and microfluidics sperm sorter device to select most progressively motile spermatozoa. Sperm was assessed by Terminal Deoxynucleotidyl transferase dUTP Nick End Labeling (TUNEL) (In Situ Cell Death Detection Kit, Roche) on at least 500 spermatozoa under a fluorescent microscope utilizing a threshold of 15%.

RESULTS

In these men, the average SCF was 14.7 % in the raw amale; however, following DGC, the SCF decreased to 8.8% and after MFSS processing it reduced to 2.4% (P<0.001).

CONCLUSIONS

According to our studies, SCF appears to be linked to the kinetic characteristic of the sperm cell. MFSS yielded the highest progressively motile spermatozoa characterized by high DNA integrity. Couples with unexplained infertility and unable to achieve a pregnancy due to a concealed male factor may benefit from MFSS to improve their reproductive outcome.