OBJECTIVE: Oxidation-reduction potential (ORP) is a novel measure of oxidative stress or redox imbalance in biological fluids. Reactive oxygen species (ROS) easily reacted with a very short half-life. ROS levels in the seminal ejaculate should be measured within an hour after collection to prevent a reduction in ROS levels over time. The traditional methods of measurement of seminal ROS are time consuming and time consuming making it difficult to use them for diagnostic purposes. It would therefore be highly advantageous to employ a method that is independent of semen age and provides results in real time. The objective was to assess the effect of time on static ORP (sORP), which provides a snapshot of current redox imbalance, and capacity ORP (cORP) which is indicative of the amount of antioxidant reserves available as determined in seminal plasma.

RATIONALE: Oxidation-reduction potential (ORP) is a novel measure of oxidative stress or redox imbalance in biological fluids. Reactive oxygen species (ROS) easily reacted with a very short half-life. ROS levels in the seminal ejaculate should be measured within an hour after collection to prevent a reduction in ROS levels over time. The traditional methods of measurement of seminal ROS are time consuming and time consuming making it difficult to use them for diagnostic purposes. It would therefore be highly advantageous to employ a method that is independent of semen age and provides results in real time. The objective was to assess the effect of time on static ORP (sORP), which provides a snapshot of current redox imbalance, and capacity ORP (cORP) which is indicative of the amount of antioxidant reserves available as determined in seminal plasma.

RESULTS

CONCLUSIONS

ORP values are not affected by the age of semen or seminal plasma for up to 120 minutes, thereby making it easier to employ this new technology for diagnostic use.

Table 1: Base line semen parameters of test subjects (n=18)

Table 2: cORP and ORP levels as measured in semen and seminal plasma over time

Table 1: Base line semen parameters of test subjects (n=18)

Table 2: cORP and ORP levels as measured in semen and seminal plasma over time

Figure 3: Correlating semen parameters to time intervals.

Figure 2: The MiOXSYS Test (Aytu Biosciences) was used for measuring oxidation-reduction potential (ORP). A consists of an A, an analyser and B disposable sensor strips.

Figure 2: The MiOXSYS Test (Aytu Biosciences) was used for measuring oxidation-reduction potential (ORP). A consists of an A, an analyser and B disposable sensor strips.

Figure 1: Line diagram depicting the experimental design.