

Studying the Correlation of Detailed Semen Analysis to RPL- A Short Commentary

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The incidence of abortions is as high as 30% in pregnancies, while for 50%, the aetiology of the miscarriage remained unknown [1]. Thus need is there to find different factors in both male or female partner that might contribute to the same. Thus A study by Eisenberg *et al* entitled Semen quality and pregnancy loss in a contemporary cohort of couples recruited prior to conception: data from the LIFE Study [2]. They did a prospective study studying 384 couples who had a singleton pregnancy, seen during the 7 post conception weeks of gestation to find out the correlation between preconception Semen characteristics and the chances of single pregnancy losses, along with recurrent pregnancy losses (2 or more losses) (RPL). They found 98 (28%) of couples suffered a pregnancy loss following a singleton pregnancy. Earlier case control studies regarding RPL alone found changes in semen motility, morphology along with increased rates of DNA fragmentation [3]. Eisenberg, *et al.* found only increased levels of DNA fragmentation in the pregnancy loss group but not in the RPL group. One reason given is the possibility of markedly lower sample size. In the RPL, a reduced total sperm count was seen, not seen in earlier studies. This difference between the 2 studies are possibly because of differences in the population studied, with most of patients belonging to the single pregnancy loss group. Thus finding differences in this study being lower in magnitude and being less significant than earlier studies on RPL.

Advantage of this study is the prospective approach, and novel work. These studies were done on selected populations, which require sample collection following conception, with considerable time might have passed after conception and since previous loss. There are some limitations of this type of a prospective approach, with one important one being the patient population studied. One needs to study the most likely population that is effected by RPL, to see the effect of male factors on RPL. Exclusion criteria was much more which lead to the numbers of study population being small seeing that the ultimate results were not known. Although one benefits by increasing the number of samples, the researchers capability to find changes that are actually associated with the disorder in question, especially if changes are subtle. Though some of the male partners who were tested might have lead to the pregnancy loss in one way or other, similarly it is possible that large numbers did not add at least significantly to the loss. In studying a population that has multiple aetiologies, it is difficult to get big differences in the 2 groups. Thus case control studies is needed in future studies to identify male factor in the aetiology of RPL.

In this study including both single pregnancy loss and RPL was innovative and added a lot of value in the field. Though there are inherent limitations of this approach, with finding differences between groups since there was a big chance that one actually does not check a person who actually causes the couples disorder. In this study of the total 70 couples presenting with single pregnancy loss, only 14 had a 2nd loss. Thus not all patients having single loss had any persistent cause and thus finding a big difference between the group which had single loss and those not having any pregnancy loss adds further weightage to these findings. This study although might now directly give lot of outcomes as they concluded themselves it gives lot of directions regarding future research regarding male partners contribution to pregnancy loss. Just studying semen parameters might not truly reflect how much contribution comes from the man in causing pregnancy loss or does any effect actually come. Further research needs to be directed to epigenetic mechanisms, which seem to be interesting when no definite history of infertility is there in either male or female issues. Sperm DNA signatures which are linked to embryogenesis were published by Aston, *et al* [4]. With sperm RNA and *in vitro* fertilization outcomes similar findings were reported by Jordan M, *et al* [5]. For finding such factors it would be important to look for differences in cases who had been strictly classified as idiopathic RPL, in case where all potential female factors or aneuploidy in the germline have been removed Such strict tests gives the biggest chances of finding changes which might predict pregnancy loss.

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