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JOURNAL ARTICLE

Seminal plasma glycodelin and fertilization in vitro

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Endometrium-derived glycodelin-A inhibits sperm-egg binding, whereas differentially glycosylated seminal plasma glycodelin-S does not. The difference has been ascribed to the specific type of glycosylation of glycodelin-A. We studied whether the total glycodelin concentration or the relative glycodelin-A concentration in seminal plasma are related to the in vitro fertilization rate of oocytes. We found that total glycodelin levels were significantly higher in a quartile of men with the lowest in vitro fertilization rate compared with the remaining 3 quartiles combined (P = .01). However, for predicting low fertilization capacity of sperm, combining the glycodelin and sperm concentrations by logistic regression analysis did not significantly increase the information obtained from sperm concentration alone. We used specific lectin-immunoassays to determine whether increased glycodelin-A-type glycosylation in seminal plasma would be related to failure to fertilize. No difference was found between the groups with high fertilization and no fertilization in vitro. It is concluded that, although high seminal plasma total glycodelin level has a tendency of being associated with a lower fertilization rate, the difference has limited value to predict fertilization in vitro.

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Biol Reprod, March 1, 2002; 66(3): 624 - 628.
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