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Journal of Andrology, Vol 20, Issue 2 214-219, Copyright © 1999 by The American Society of Andrology

JOURNAL ARTICLE

Some vasovasostomized men are characterized by low levels of P34H, an epididymal sperm protein

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During epididymal transit, sperm surface proteins involved in the fertilization process can be added or modified. P34H, a human epididymal-sperm protein, is proposed to be involved in the interactions between spermatozoa and the zona pellucida. We have previously demonstrated that P34H is present in men of proven fertility and is absent in 50% of men presenting with idiopathic infertility. Spermatozoa with a low amount of P34H exhibit a dramatic reduction in their ability to interact with zona pellucida. Even if the surgical success of vasectomy reversal is high, fertility is not always reestablished, possibly due to epididymal damage caused by vasectomy. In this study, western blot analyses were performed to determine the level of P34H present on spermatozoa of men who underwent vasectomy reversal. Spermatozoa obtained from different semen samples from a given individual had similar P34H levels; however, samples from different men were highly variable. When quantified by densitometric scanning, P34H levels from vasovasostomized men varied between 1.5% and 149% compared with that from a fertile donor who represented 100%. Eighteen of 25 vasovasostomized men had a P34H level lower than 30% of the normal value, while the remaining 7 males were in the normal range. Furthermore, the population of vasovasostomized men with P34H levels lower than 30% was significantly different from the control group of 19 fertile men. The high variation of P34H levels observed in vasovasostomized men did not correlate with the spermiogram values ($P > 0.05$). An important factor in determining sperm P34H level appears to be the period of time elapsed between the vasectomy and vasovasostomy. In summary, our results show that the P34H level varied from one man to another and that low levels of the epididymal sperm protein is associated with vasectomy reversal.

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