

SHORT REPORT

Psychosocial factors in recurrent miscarriages

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Our group previously reported that the pre-conceptual natural-killer-cell (NK) activity may be a predictor of miscarriage (1). As a new concept, it has been suggested that the NK activity is stimulated by an abortogenic arrangement in the psycho-neuro-immuno-endocrine network (2). Risk factors such as cytogenetic, uterine, endocrine, metabolic, and autoimmune abnormalities each make only small contribution to the cause of recurrent miscarriages (3, 4). While stress was recently shown to result in abortions in mice by inducing abortogenic cytokines via neurotransmitters (5), its possible role in the human has remained unclear. The questions of 'Which psychosocial factors are correlated with emotional impact following miscarriage?' and 'Does the impact have any effect on the subsequent pregnancy?' might be of major importance.

We have studied 29 couples with a history of two consecutive first-trimester miscarriages and no live births. None of the women had any clearly identifiable causes for the recurrent miscarriages, such as uterine anomalies, genetic abnormalities in either partner, or evidence of antiphospholipid antibodies. Semi-structured interviews with tape-recording were conducted for each couple in separate rooms of the hospital, at least three months after their second miscarriage. The analysis was performed to evaluate the relative emotional impact of the first and second miscarriages and to demonstrate any psychosocial correlates to the impact, using a stepwise multiple regression method.

In addition, it was examined whether the first miscarriage impact has any influence on the second pregnancy duration.

The results showed that the second miscarriage had a significantly stronger negative impact than the first for both women and their partners. Women demonstrated a far more intense reaction than their partners (Table I), with the negative impact of the first miscarriage being significantly increased by the following five psychosocial factors: long courting period before marriage ($\beta = -0.59$, $p < 0.001$), unexpectedness of the miscarriage ($\beta = 0.49$, $p < 0.001$), having to pay a house rental ($\beta = -0.30$, $p = 0.002$), absence of negative received support ($\beta = 0.27$, $p = 0.002$), which was contrary to expectation, and lack of social support after the miscarriage ($\beta = 0.22$, $p = 0.02$). These five variables statistically explained 93% of the variance in the first miscarriage impact. With the second miscarriage, the negative impact was signifi-

Table I. Negative emotional impact of recurrent miscarriages

Negative impact	Miscarriage		<i>p</i>
	1st	2nd	
Women	-74.5 (30.9)	-80.0 (26.8)	0.004
Partners	-59.7 (33.4)	-65.0 (30.9)	<0.001

Data are mean (s.d.) values for the self-evaluated intensity of emotional impact after miscarriage when the most severe life event was considered as -100.

cantly increased by placing more value on child bearing in adolescence ($\beta = -0.54$, $p = 0.003$) and thinking less about jobs ($\beta = 0.43$, $p = 0.015$). The two variables statistically explained 38% of the variance. Interestingly, it was found that the smaller the negative impact of the first miscarriage, the longer the duration of the second pregnancy ($r = 0.41$, $p = 0.03$).

These observations suggest an importance of psycho-neurological mechanisms in the psycho-neuro-immuno-endocrine network in women suffering recurrent miscarriages. Further prospective studies should elucidate whether psychosocial stressors in recurrent aborters are predictive of the risk of miscarriage at the next pregnancy.

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