Adverse perinatal conditions were associated with risk of suicide by violent means for men

Jacobson B, Bygdeman M. *Obstetric care and proneness of offspring to suicide as adults: case-control study.* *BMJ* 1998; **Nov14**;317:1346-9.

Question

Are traumatic birth and obstetric procedures associated with risk of suicide by violent means in offspring as adults?

Design

Case control study.

Setting

Stockholm, Sweden.

Participants

Cases were 242 adults who committed suicide by violent means between 1978 and 1995 and who were born between 1945 and 1980. Controls were 403 matched biological siblings.

Assessment of risk factors

A trauma score was calculated by adding the number of instances when any of the following occurred: presentation other than vertex, meconium stained amniotic fluid and membranes, instrumental delivery or internal version, and resuscitation and other complications usually requiring ward care. Opiate use within 24 hours of birth was also recorded. Data from the birth records were extracted by midwives blinded to the outcome.

Main outcome measure

Suicide (certified by the National Board of Forensic Medicine).

Main results

Offspring who committed suicide had higher rates of some

obstetric complications (instrumental delivery or internal version, resuscitation, and other complications), higher trauma scores, and lower rates of opiate administration. In a multivariate analysis, violent suicide was predicted by maternal age ($p=0.009$), male sex ($p=0.006$), absence of opiate administration ($p=0.007$), and interaction of male sex and trauma score ($p=0.002$). The risk of suicide was increased in men exposed to a single and multiple trauma but not in women, and was reduced in adults whose mothers received opiates during delivery (table).

Conclusions

Adverse perinatal conditions causing pain to the fetus were associated with an increased risk of suicide by violent means for adult men. Giving opiates to the mother was associated with a decreased risk of subsequent suicide by violent means.

Relative risk (RR) of suicide in adults exposed to perinatal trauma

Risk factor	RR (95% CI) Men	RR (CI) Women
Single trauma	2.2 (1.3 to 3.6)	1.02 (0.05 to 2.1)*
Multiple trauma	4.9 (1.8 to 13.0)	1.04 (0.2 to 4.6)*
	RR (CI) Men and women	
Single opiate dose	0.5 (0.3 to 0.8)	
Multiple opiate dose	0.3 (0.1 to 0.7)	

*Not significant

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For correspondence: Professor B Jacobson, Department of Medical Engineering, F60 Novum, Huddinge University Hospital, SE-141 86 Huddinge, Sweden. Email: bertil.jacobson@labtek.ki.se.

Commentary

This study relates the experience of traumatic birth to a remote sequel—violent suicide, occurring years later. An earlier study linked specific types of birth trauma (eg, asphyxiation or violent mechanical) with suicide methods (asphyxiation or violence, respectively).¹ Opiates given maternally increased addiction probability. Both studies carry on from the work of Salk *et al.*² In the study reviewed here, multiple birth trauma boded a relative risk for violent suicide much stronger for male than female offspring (4.9 *v* 1.04). Remarkably, opiates given maternally were protective for offspring suicide.

The notion of birth trauma having adverse psychological effects originated during the 1920s. How, if one regards the birth memory reactivation theory as fantastic, can such findings be explained, and by what mechanism? Salk *et al* pointed both to respiratory distress in the fetus and to adverse maternal factors that did not affect the fetus directly.² Jacobson

and Bygdeman's trauma score included only events likely to cause or indicate pain to the infant, and maternal factors and socioeconomic status were analysed as potential confounders. Their arguments strengthened with their findings that opiates (mitigating fetal pain) attenuated the risk of violent suicide, and that relative risk in men rose dose incrementally. Did the painful obstetrical interventions induce some subtle brain damage, causing social disadvantage to the developing person, that had its dénouement much later on in life? Appleby cites recent work linking fetal hypoxia causing neurodevelopmental impairment with schizophrenia,³ itself a risk factor for suicide, and there is evidence that affective psychosis is similarly predisposed.^{4,5} A recent paper by Neugebauer and Reuss, however, failed to replicate the findings of Salk *et al* with a larger New York sample ($n=189$).^{2,6} thus setting the cat squarely among the pigeons.

So how are we left? Clearly, the case is still open and requires further exploration. Prudence dictates caution among obstetricians in their aggressive interventions. There should be greater awareness, and account taken, of the possibility of fetal experience of pain, whether its effects are enduring or not. Certainly, there is a continuing case for improving maternal health and social conditions.

Isaac Sakinofsky, MD

Claudia Wirz

Clarke Institute

Centre for Addiction and Mental Health
Toronto, Ontario, Canada

1 Jacobson B, Eklund G, Hamberger L, *et al.* *Acta Psychiatr Scand* 1987;**76**:364-71.

2 Salk L, Lipsitt LP, Sturmer WQ, *et al.* *Lancet* 1985;**1**:624-7.

3 Appleby L. *BMJ* 1998;**317**:1333-4.

4 Done DJ, Johnstone EC, Frith CD, *et al.* *BMJ* 1991;**302**:1576-80.

5 Sacker A, Done DJ, Crow TJ, *et al.* *Br J Psychiatry* 1995;**166**:734-41.

6 Neugebauer R, Reuss ML. *Acta Psychiatr Scand* 1998;**97**:412-8.