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


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

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>RR (95% CI) Men</th>
<th>RR (CI) Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single trauma</td>
<td>2.2 (1.3 to 3.6)</td>
<td>1.02 (0.05 to 2.1)*</td>
</tr>
<tr>
<td>Multiple trauma</td>
<td>4.9 (1.8 to 13.0)</td>
<td>1.04 (0.2 to 4.6)*</td>
</tr>
<tr>
<td>Single opiate dose</td>
<td>0.5 (0.3 to 0.8)</td>
<td>0.55 (0.3 to 0.8)</td>
</tr>
<tr>
<td>Multiple opiate dose</td>
<td>0.5 (0.1 to 0.7)</td>
<td>0.55 (0.3 to 0.8)</td>
</tr>
</tbody>
</table>

*Not significant

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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). Opiates given maternally increased addiction probability. Both studies carry on from the work of Salk et al. In the study reviewed here, multiple birth trauma boded a relative risk for violent suicide much stronger for male than female offspring (4.9 vs 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. 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 strong it is to the developing 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 denouement much later on in life? Appleby cites recent work linking fetal hypoxia causing neurodevelopmental impairment with schizophrenia, itself a risk factor for suicide, and there is evidence that affective psychosis is similarly predisposed. 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), 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.

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