

The perinatal outcome of pregnancy without prenatal care A retrospective study in Szeged, Hungary

Hajnalka Orvos^a, Ildikó Hoffmann^a, Ildikó Frank^{a,*}, Márta Katona^b,
Attila Pál^a, László Kovács^a

^aDepartment of Obstetrics and Gynaecology, University of Szeged, Semmelweis u. 1., 6725 Szeged, Hungary

^bDepartment of Pediatrics, University of Szeged, Korányi Fásor 14-15, 6725 Szeged, Hungary

Accepted 28 June 2001

Abstract

Objective: The aim of this study was to examine the social conditions of women who never attended prenatal care and to evaluate the perinatal outcome of their newborns. **Study Design:** A retrospective analysis of uncared pregnancies of women who delivered at the Department of Obstetrics and Gynaecology, University of Szeged, Hungary between 1 January 1996 and 31 December 1998. There were 5262 deliveries during this period, of which 54 (1%) had no prenatal care. Matched controls (108 cases) were selected on the basis of maternal age, educational level, the number of gravidity and parity, and marital status. **Results:** The mean age of women with out-of-care pregnancies was 27 years \pm 3.9; 5 women were under 18, 23 (43%) were unmarried, 5 (9.3%) did not finish elementary school and 35 (65%) had only elementary school education. Compared to the controls there were more in preterm labors (33 versus 14% (OR 3.1, 95% CI 1.4–6.8)), lower birth weight ($P < 0.001$) and more given up for adoption (17 versus 0.9% (OR 21.4, 95% CI 2.63–173.9)). **Conclusion:** These data underline the importance of regular prenatal care in the prevention of preterm delivery. © 2002 Elsevier Science Ireland Ltd. All rights reserved.

Keywords: IUGR; Preterm newborn; Uncared pregnancy

1. Introduction

The correlation between neglected prenatal care and the increasing rate of maternal and fetal morbidity has been revealed in the late 1940s. Eastman [1] observed in 1947, that the prematurity rate was 24% among no care patients, but only 8% among those attending three or more prenatal visits. Tokuhata et al. [2] studied birth certificate data of 185,000 deliveries and found a 23.6% prematurity rate among women without prenatal care compared with 6.9% among those with care. In 1980, Ryan et al. [3] observed that the group of women with inadequate prenatal care had significantly higher fetal, neonatal, and perinatal mortality rates. Moore et al. [4] found that neonates of women receiving no care showed significantly greater morbidity than the babies of women attending prenatal services, including an increased incidence of premature rupture of the membranes and preterm delivery (13 versus 2%), low birth weight (21 versus 6%) and intensive care unit admission (24 versus 10%). Several studies which have varied in

design, population base, definitions and data analysis have provided mixed results in accurately identifying pregnant women at risk [5,6]. However, some individual risk factors are well defined as being correlated with an increased incidence of preterm labor in the developed countries [7].

The aim of this study was to analyze the social conditions of mothers who never attended prenatal care, and also to evaluate the status of their infants.

2. Materials and methods

Obstetrical and social data of 54 mothers who never attended prenatal care and delivered at the Department of Obstetrics and Gynaecology, University of Szeged, Hungary in the course of a 3-year period between 1 January 1996 and 31 December 1998 were assessed. Age, qualifications, marital status, place of living and the number of previous pregnancies and deliveries were surveyed. Mode of delivery, mean gestational age (which was ascertained using the first day of the mother's last menstruation and the findings of the gynaecologist–pediatrician, respectively), rate of prematurity, mean birth weight, intrauterine growth retardation

* Corresponding author. Tel.: +36-62-545511; fax: +36-62-545711.
E-mail address: orvosh@obgyn.szote.u-szeged.hu (I. Frank).

(IUGR), Apgar score at 5 min, umbilical cord blood pH, admission to the neonatal intensive care unit (NICU) and transfer into children's home were evaluated. IUGR was defined as birth weight below the 10th percentile for gestational age according to sex and preterm birth was considered in deliveries before 37 complete gestational weeks. The data of the newborns of mothers who never attended prenatal care were compared with data of a matched control group selected on the basis of same socio-economical status pregnancies (maternal age, education level, the number of gravidity and parity, marital status) receiving adequate prenatal care during this period. The 108 cared pregnancies chosen for the control group matched exactly all the socio-economical criteria of the study group. The control group was selected out of 5262 deliveries during this period.

Statistical analysis was performed by using χ^2 -test and Student's *t*-test. $P < 0.05$ was considered to be statistically significant.

3. Results

The mean maternal age was 27 years. Table 1 shows the analysis of their social backgrounds. Perinatal outcome is presented in Table 2.

4. Comment

Previous observations [1,2] clearly showed a positive correlation between uncared pregnancy and increased risk of maternal and fetal adverse outcome. In the 1980s some statistics revealed that the adequacy of prenatal care had a very definite effect on perinatal morbidity [3,4]. Availability is a key component of prenatal health care services, nevertheless, in itself it does not guarantee adequacy of care [8,9]. A more recent review of the literature concludes that

Table 1
Social data of mothers attending no prenatal care

	<i>n</i>	%
Maternal age (years)		
<18	5	9.3
Educational level		
Under elementary	5	9.3
Elementary	35	65
Secondary or higher	14	26
Marital status		
Single	23	43
Divorced	5	9.3
Partner in life	2	3.7
Married	24	44
Place of living		
Urban	29	54
Number of previous deliveries		
0	23	43
1	6	11
2	7	13
3 or more	18	33

prenatal care has not been demonstrated to improve birth outcomes conclusively [10]. The parallel rise in preterm birth rate and the proportion of women with intensive care utilization has led some researchers to suggest that the benefits of prenatal care have been oversold [11]. However, because prenatal care is widely assumed to be beneficial a randomized controlled trial of prenatal care versus no care would be unethical. Therefore, the evaluation of prenatal care will remain controversial because it relies on less direct methods.

Our results, in accordance with numerous previous observations, revealed that mothers who have never attended prenatal care are at higher risk to deliver a pathological newborn compared to a control group of mothers with similar maternal age, educational level, number of gravidity

Table 2
Perinatal outcome

	Study group (<i>n</i> = 54)		Control group (<i>n</i> = 108)		<i>P</i>	OR (95% CI)
	No.	%	No.	%		
Prematurity	18	33	15	14	<0.01	3.1 (1.4–6.8)
Mode of delivery						
Spontaneous vaginal	51	94	93	86		
Operative vaginal	0		5	4.6		
Caesarean section	3	5.6	10	9.3	NS	
Mean birth weight (g)	2647 ± 769		3057 ± 776		<0.001	
IUGR ^a	12	22.2	16	14.8	NS	
Apgar score at 5 min <7	5	9.3	4	3.7	NS	
Umbilical cord blood pH <7.2	8/38	21	14/83	16.9	NS	
NICU ^b admission	8	15	10	9.3	NS	
Given up for adoption	9	17	1	0.9	<0.001	21 (2.6–174)

^a IUGR: intrauterine growth retardation.

^b NICU: neonatal intensive care unit.

and parity, and marital status. It is appealing that scarcely more than half of the newborns delivered from such pregnancies in our study group were mature and healthy. In our study group of uncared pregnancies every third deliveries were preterm. The significant difference in preterm deliveries is likely dependent on the lack of care during pregnancy. Although our clinic is a tertiary center the selection of uncared patients was not based on their health risks. They were admitted to our clinic because they lived in the area for which we have an obligation of regular care.

Organized mother and infant care in Hungary originates from the beginning of the century. Health visitor training started in 1915 and the mother and infant protection was declared to be a public mission by the government in 1917.

Poor social conditions, undesired pregnancy and the intention of hiding the pregnancy were the most common causes of neglecting antenatal care. Social and political changes of the past decade in our and in neighboring countries have contributed to increased number of uncared pregnancies. This is despite the fact that there is a well established prenatal care system that operates free in Hungary.

The prevention of unexpected pregnancies should get more emphasis during health education, and women should understand that pregnancy means responsibility.

References

- [1] Eastman NJ. Prematurity from the viewpoint of the obstetrician. *Am Pract* 1947;1:343.
- [2] Tokuhata GK, Digon E, Mann L. Prenatal care and obstetric abnormalities. *J Chronic Dis* 1973;26:163.
- [3] Ryan GM, Sweeney PJ, Solola AS. Prenatal care and pregnancy outcome. *Am J Obstet Gynecol* 1980;137:876–81.
- [4] Moore TR, Origel W, Key TC, Resnik R. The perinatal and economic impact of prenatal care in low socio-economic population. *Am J Obstet Gynecol* 1986;154:29–33.
- [5] Kramer MS. Intrauterine growth and gestational duration determinants. *Pediatrics* 1987;80:502–11.
- [6] Stein A, Campbell EA, Day A, McPherson K, Cooper PJ. Social adversity, low birth weight, and preterm delivery. *Br Med J* 1987;295:291–3.
- [7] Al-Eissa YA, Ba'Aqeel HS. Risk factors for spontaneous preterm birth in a Saudi population. *Eur J Obstet Gynecol Reprod Biol* 1994;57:19–24.
- [8] Deprez RD, Agger MS, McQuinn LB. Access to physicians, obstetric care use, and adequacy of prenatal care for Medicaid patients in Maine: 1985–1989. *Obstet Gynecol* 1996;88:443–50.
- [9] Ray WA, Gigante J, Mitchel Jr. EF, Hickson GB. Perinatal outcomes following implementation of TennCare. *JAMA* 1998;279:314–6.
- [10] Fiscella K. Does prenatal care improve birth outcomes? A critical review. *Obstet Gynecol* 1995;85:468–79.
- [11] Misra DP, Guyer B. Benefits and limitations of prenatal care: from counting visits to measuring content. *JAMA* 1998;279:1661–2.