International Journal of Gynecology and Obstetrics 78 (2002) 245–247

International Journal of GYNECOLOGY & OBSTETRICS

www.elsevier.com/locate/ijgo

Brief communication

# Pregnancy and labor complications in teenagers in Tehran

A. Moini*, K. Riazi, A.H. Mehrparvar

*Department of Obstetrics and Gynecology, Roointan-Arash Maternity Hospital, Tehran University of Medical Sciences, Tehran, Iran*

Received 15 February 2002; received in revised form 1 May 2002; accepted 1 May 2002

*Keywords:* Teenage pregnancy; Adolescence; Pregnancy; Age factor; Complications; Comparative study

Teenage pregnancy is recognized in many countries as a health risk associated with a higher rate of maternal and fetal complications, particularly in developing countries with limited obstetric facilities. This study compares the obstetric outcomes of teenagers (age <20 years) with those of 20–29-year-old mothers.

The data were collected from the records of pregnant women admitted for delivery at four Tehran University teaching hospitals during a 2-year period (1999 and 2000). We compared 873 records of 312 teenagers with 516 records of 20–29-year-old women. All mothers were primigravidas with no underlying disease. Multiple pregnancies and stillbirths were not included in the study.

We evaluated gestational age (GA), mothers' hemoglobin, pre-eclampsia, preterm labor, birthweight, and the mode of delivery [normal vaginal delivery (NVD) vs. cesarean section (CS)]. Teenagers were grouped into low teens (17 years and younger) and high teens (18–19-year-olds).

The mean age for teenage mothers was 17.9 years, with a minimum age of 14 years, and the mean age for controls was 23.2 years. The mean hemoglobin level was 12.66 g/dl for teenagers and 12.65 g/dl for controls [not significant (NS)]. The mean birthweight of children born to teenage mothers was 3039.04 g (min = 900 g, max = 4200 g), compared with 3071.03 g (min = 850 g, max = 4350 g) for controls (NS) (Table 1).

Variables within the two teenage subgroups were also compared. The mean age was 16.6 years for low teens and 18.5 years for high teens. The mean hemoglobin level was 12.51 g/dl for low teens and 12.73 g/dl for high teens (NS). The mean birthweight was 2933.7 g (min = 900 g, max = 4100 g) for low teens and 3087.9 g (min = 950 g, max = 4200 g) for high teens, showing a significant difference ($P = 0.036$) (Table 2).

Differences for preterm labor, C/S, mean maternal hemoglobin level, mother's anemia and low birth weight (LBW) between the two groups were not significant. A significantly higher pre-eclampsia rate was seen in controls. An increased rate of preterm labor and a decrease in mean birthweight were encountered in younger teenagers.

*Corresponding author. Tel.: +98-21-240-9315; fax: +98-21-240-9314.

*E-mail address:* info@royaninstitute.org (A. Moini).



PII: S0020-7292(02)00141-8

Table 1
Comparison of obstetric outcomes between teenage mothers and mothers aged 20–29 years[a]

| Complication | Teenage mothers $n=312$ (%) | 20–29-year-old mothers $n=516$ (%) | RR | 95% CI | Significance |
|---|---|---|---|---|---|
| Anemia[b] | 37 (11.9) | 65 (11.6) | 1.024 | 0.701–1.495 | NS |
| Cesarean section | 98 (31.4) | 212 (37.8) | 0.831 | 0.684–1.010 | NS |
| Low birth weight | 38 (12.2) | 64 (11.4) | 1.068 | 0.732–1.556 | NS |
| Placental abruption | 6 (1.9) | 4 (0.7) | 2.697 | 0.767–9.485 | NS |
| Pre-eclampsia | 4 (1.3) | 29 (5.2) | 0.248 | 0.088–0.699 | S |
| Preterm labor | 38 (12.2) | 61 (10.9) | 1.120 | 0.765–1.639 | NS |

*Abbreviations:* RR, relative risk; CI, confidence interval; NS, not significant; S, significant ($P<0.05$).
[a] Based on risk estimation test.
[b] Mother's third trimester Hb $<11$ mg/dl [4].

Table 2
Comparison of obstetric outcomes between 17-year-old or younger mothers and 20–29-year-old mothers[a]

| Complication | Teenage mothers $n=312$ (%) | 20–29-year-old mothers $n=516$ (%) | RR | 95% CI | Significance |
|---|---|---|---|---|---|
| Anemia[b] | 15 (15.2) | 22 (10.3) | 1.467 | 0.796–2.704 | NS |
| Cesarean section | 31 (31.3) | 67 (31.5) | 0.995 | 0.700–1.417 | NS |
| Low birth weight | 14 (14.1) | 24 (11.3) | 1.225 | 0.679–2.320 | NS |
| Placental abruption | 3 (3) | 3 (1.4) | 2.152 | 0.442–10.471 | NS |
| Pre-eclampsia | 2 (2) | 2 (0.9) | 2.152 | 0.308–15.053 | NS |
| Preterm labor | 20 (20.2) | 18 (8.5) | 2.391 | 1.325–4.315 | S |

*Abbreviations:* RR, relative risk; CI, confidence interval; NS, not significant; S, significant ($P<0.05$).
[a] Based on risk estimation test.
[b] Mother's third trimester Hb $<11$ mg/dl [4].

Our results are different from those reported in India, [1] which indicate a significantly higher rate of anemia, pregnancy-induced hypertension, preterm labor, and low birthweight among teenage mothers.

Lao et al., from Hong Kong, [2] reported an increased incidence in preterm labor and LBW in teenagers. Pal et al. [3] found anemia to be a complication in teenagers.

Our study did not show a higher rate of obstetric complications in teenagers than in 20–29-year-old mothers. Our results also indicate that all teenagers should not be grouped together when their obstetric outcomes are compared with those of adults.

The slight differences observed in different reports might be due partly to racial characteristics and regional differences in the risk factors influencing teenage pregnancies. These risk factors include intention to become pregnant, smoking during pregnancy, low educational attainment of teenage mothers, and lack of appropriate prenatal care. In our country, because of the national and religious culture, unintended pregnancies reaching delivery are quite rare, smoking is not common among teenage females, and family support for pregnant teenagers is similar to that of older mothers and is often good.

As this study was done in Tehran and in state university hospitals, its results cannot be simply generalized to the whole population. First, because the majority of the women delivered at these hospitals are from the low-to-middle socio-economic classes; and secondly, because the relatively good prenatal care given in urban health centers cannot reflect the care given in the country's rural areas.

To make the comparison more meaningful, it is recommended that this study be reproduced both in rural areas and at private maternity centers.

## References

[1] Verma V, Das KB. Teenage primigravidae: a comparative study. Indian J Public Health 1997;41(2):52–55.
[2] Lao TT, Ho LF. The obstetric implications of teenage pregnancy. Hum Reprod 1997;12(10):2303–2305.
[3] Pal A, Gupta KB, Randhawa I. Adolescent pregnancy: a high-risk group. J Indian Med Assoc 1997;95(5):127–128.
[4] James DJ, Steer PJ, Weiner CP, Gonic B. High risk pregnancy—management options. 2nd ed. China: W.B. Saunders, 2000.