The Obstetric Performance of Teenage Women: A Reappraisal

Terence Tzu-Hsi Lao, MBBS, FRCOG

In many societies, teenage pregnancy is considered undesirable–a reflection of the failure of society, the education system and her parents. It constitutes a family disaster and stigma for the unfortunate teenager. Most of these pregnancies are unplanned and unwanted. Not surprisingly, therapeutic abortion is usually considered the only (or more acceptable) solution.

Despite advances in modern therapeutic abortion techniques, an element of risk remains–especially when performed in an illegal setting and/or in the second trimester. Apart from the obvious complications such as retained products of conception, infection, haemorrhage, and injury to the uterus and cervix, there may be long term sequelae.

There is strong evidence to indicate that the method of therapeutic abortion, the number of abortions and the trimester when abortion is performed are risk factors for miscarriages and preterm labour in future pregnancies.[1-3] This is especially relevant to the naive teenager who might present herself in the late second trimester or beyond, requesting termination of the pregnancy without understanding the risks involved.

Recent reports[4-9] have disputed the idea that teenage pregnancy is high-risk with a generally unfavourable outcome. If the obstetric outcome is comparable with that of older peers, a safer alternative to termination of pregnancy in unfavourable conditions may be adoption of the infant after delivery.

DEFINITION OF TEENAGE PREGNANCY

Teenage pregnancy generally refers to pregnant women aged ≤19 years. It has been claimed that although women <20 years of age are teenagers, significant differences may exist between those aged ≤16 years and those aged ≥17 years due to differences in their growth and maturity. In some studies, the term "teenager" is replaced by "adolescent". However, the term "adolescent" has also been used in other studies where the maternal age was not defined. When referring to the literature on the obstetric outcome of adolescents, it is important to note the cut-off age used in individual studies.

RISK FACTORS

Pregnancy is usually contemplated by women who are financially stable or independent, and/or in a stable relationship (married or not). These women are often in their twenties or older. For teenage women, the majority of pregnancies are unplanned and unwanted. These teenagers are often socially and economically deprived or disadvantaged, in an unstable relationship, and lacking psychosocial support. Antenatal care is often sought either late in pregnancy or not at all. All these conditions constitute risk factors for adverse pregnancy outcome, (Table 1) and sub-optimal obstetric performance.

ADVERSE OUTCOMES

Certain adverse pregnancy out-

Table 1. Risk Factors Associated With Teenage Gravidae

Biological

Active physical growth, may be competing with fetus for nutrients
Immature physique, probably small pelvis
Specific nutritional deficiencies such as iron
Smoking
Substance abuse
Sexually transmitted diseases
Unplanned/unwanted pregnancy

Social

Unmarried or unstable relationship
Lack of family support
Social stigma
No or low income
Problem with accomodation
Late or no antenatal care

comes have been associated with teenage pregnancies. These include preterm births,[10,11] fetal growth restriction,[11,12] low birth weight infants,[10,13-15] higher perinatal mortality,[10,15-17] and need for instrumental delivery[15,18] or Caesarean section.[19,20] (Table 2)

However, whether teenage women are biologically predisposed to these outcomes is debatable. Apart from the sociodemographic risk factors, there are frequently other concomitant problems such as smoking, substance abuse and malnutrition. Unsatisfactory pregnancy outcomes may be more related to pre-existing socioeconomic and health problems than to the innate reproductive capability of the teenager.[4-7]

A more accurate assessment of the obstetric performance of teenage women can be obtained if problems with psychosocial support and antenatal care are eliminated or reduced. Indeed, studies have suggested that the perinatal outcome of teenage pregnancies is comparable with that of older women, if good psychosocial support and adequate prenatal care is provided.[4-7] It is uncertain whether the increased risk for instrumental delivery[15,18] and Caesarean section[19,20] is related to the physical immaturity of these women or to the development of complications.

In Hong Kong, teenage women who are local residents have unrestricted access to free high-standard prenatal care in government hospitals. In addition, social support including accommodation is readily available from government and charitable organisations. Thus teenage mothers enjoy a level of prenatal care similar to their older peers should they continue with their pregnancy and deliver at a public hospital. These mothers did not show an increase in adverse pregnancy outcome, except for preterm birth, compared with their older peers who were delivered in the same hospital;[8] indeed, they had lower rates of instrumental and Caesarean deliveries.

These findings were supported by a subsequent case control study in which nulliparous teenage mothers were compared with nulliparous women aged 20 to 34 years.[9] Teenage mothers had a similar incidence of antepartum haemorrhage and pre-eclampsia, but a lower incidence of prelabour membrane rupture (RR 0.308), gestational diabetes mellitus (RR 0.500), instrumental (RR 0.405) and Caesarean delivery (RR 0.361).

There was an increased incidence of small-for-gestational age (SGA) infants (RR 1.890), which was expected because of the higher incidence of smokers (20.9% vs. 2.9%) and lower maternal body mass index (20.2 kg/m^2 vs. 20.9 kg/m^2). However, teenage mothers also had increased incidence of large-for-gestational age (LGA)

and macrosomic (birth weight 4000 g) infants (RR 1.638 and 7.00, respectively) despite their lower body mass index and higher incidence of gestational diabetes mellitus.

COMPARISON OF MOTHERS OVER, AT AND BELOW 16 YEARS OF AGE

The conventional belief is that young adolescents are physically less mature (eg. smaller pelvis) and are, therefore, at greater risk of instrumental and Caesarean deliveries. However, this was disputed by a study which found no significant difference in the incidence of instrumental (16.1% vs. 19.3%) or Caesarean (3.6% vs. 3.3%) deliveries between mothers <17 years of age and those aged ≥17 years.[9] In addition, there was no difference in the gestational age or mean birth weight of the infants.

As longitudinal growth can occur in pregnancy,[21] there may be an associated growth of the pelvis. It has been proposed that pregnancy may stimulate pelvis maturation, preparing it for delivery of the fetus.[9] This finding suggests that, in a relatively affluent society, adolescent women might have a reproductive maturity similar to that of their older peers.

PRETERM BIRTH

The major complication associated with teenage pregnancy is preterm birth. One possible indicator of risk is a history of previous therapeutic abortion.[1-3] However, in a case-control study, the presence of one or more therapeutic abortions before the index pregnancy did not appear to have any significant impact on the pregnancy outcome.[22] Other potential risk factors for preterm birth include: maternal smoking and substance abuse, malnutrition, sexually transmitted diseases, vaginitis, anaemia, pre-eclampsia and psychological stress.

It has also been proposed that teenage women have an inherent risk (albeit undefined) towards preterm births,[11] and that the physical development of the teenage woman is an important (and perhaps the major) factor of this risk. This is supported by analysis of maternal heights, expressed in quartiles–the incidence of preterm birth was inversely proportional to the height quartiles; the highest incidence found in the lowest quartile.[23] Nevertheless, despite the increased risk of preterm birth, the perinatal outcome appeared satisfactory,[9,21-23] and may be more favourable than those of their older peers.

CONCLUSION

The obstetric outcome of socially deprived teenage women with an unplanned and unwanted pregnancy, and without any antenatal support, is more likely to be unsatisfactory. However, where adverse environmental conditions can be controlled or eliminated, and appropriate prenatal care provided

Table 2. Risk of Pregnancy Complications and Adverse Outcome Between Teenage and Older Women

Risk compared with older women	Complications/adverse outcome
Increased	Preterm labour and delivery
	Low birthweight (<2500 g) infants
Same/increased	Fetal growth restriction
	Pre-eclampsia
	Anaemia
	Instrumental delivery
	Caesarean section
	Perinatal mortality
Same/decreased	Antepartum haemorrhage
	Gestational diabetes mellitus

the obstetric performance of teenage women is comparable with that of older women. It may be superior in some aspects.

The favourable results reported in many studies[15-20] may not be universally obtained due to differences in the provision of obstetric care, social and family support, and the attitude of different societies and governments. From the medical perspective, the continuation of a teenage pregnancy under optimal conditions may be less hazardous than a therapeutic abortion. Such an option should be seriously considered where resources for the care of the mother and her baby are available.

REFERENCES

1. Pickering RM, Forbes JF. Risks of preterm delivery and small-for-gestational age infants following abortion: a population study. Br J Obstet Gynaecol 1985;92:1106-1112.
2. Madore C, Hawes WE, Many F, Hexter AC. A study on the effects of induced abortion on subsequent pregnancy outcome. Am J Obstet Gynecol 1981;139:516-521.
3. Lumley J. The epidemiology of preterm birth. Clin Obstet Gynecol 1993;7:477-498.
4. Bradford JA, Giles WB. Teenage pregnancy in western Sydney. Aust NZ J Obstet Gynaecol 1989;29:1-4.
5. Gale R, Seidman DS, Dollberg S, et al. Is teenage pregnancy a neonatal risk factor? J Adolesc Health Care 1989;10:404-408.
6. Creatsas G, Goumalatsos N, Deligeorglou E, et al. Teenage pregnancy: comparison with two groups of older women. J Adolesc Health 1991; 12:77-81.
7. Mahfouz AAR, El-Said MM, Al-Erian RAG, et al. Teenage pregnancy: are teenagers a high risk group? Eur J Obstet Gynecol Reprod Biol 1995;59:17-20.
8. Lao TT, Ho LF. The obstetric implications of teenage pregnancy. Hum Reprod 1997;12:2303-2305.
9. Lao TT, Ho LF. Obstetric outcome of teenage pregnancies. Hum Reprod 1998;13:3228-3232.
10. Zhang B, Chan A. Teenage pregnancy in south Australia, 1986-1988. Aust NZ J Obstet Gynaecol 1991;31:291-298.
11. Fraser AM, Brockert JE, Ward RH. Association of young maternal age with adverse reproductive outcomes. N Engl J Med 1995;332: 1113-1117.
12. Elster AB. The effect of maternal age, parity, and prenatal care on perinatal outcome in adolescent mothers. Am J Obstet Gynecol 1984;149: 845-847.
13. Naeye RL. Teenaged and pre-teenaged pregnancies: consequences of the fetal-maternal competition for nutrients. Pediatrics 1981;C7:146-150.
14. Lee KS, Ferguson RM, Corpuz M, et al. Maternal age and incidence of low birth weight at term: a population study. Am J Obstet Gynecol 1988;158:84-89.
15. Bacci A., Manhica GM, Machungo F, et al. Outcome of teenage pregnancy in Maputo, Mozambique. Int J Gynaecol Obstet 1993;40:19-23.
16. McAnarney ER. Young maternal age and adverse neonatal outcome. Am J Dis Child. 1987;141:1053-1059.
17. Olausson PM, Cnattingius S, Goldenberg RL. Determinants of poor pregnancy outcomes among teenagers in Sweden. Obstet Gynecol 1997;89: 451-457.
18. Konje JC, Palmer A, Watson A, et al. Early teenage pregnancies in Hull. Br J Obstet Gynaecol 1992;99:969-973.
19. Moerman ML. Growth of the birth canal in teenage girls. Am J Obstet Gynecol 1982;143:528-532.
20. Khwaja SS, Al-Sibai MH, Al-Suleiman AS, et al. Obstetric implications of pregnancy in adolescence. Acta Obstet Gynecol Scand 1986;65:57-61.
21. Scholl TO, Hediger ML, Ances IG, et al. Growth during early teenage pregnancies. Lancet 1988;I:710-701.
22. Lao TT, Ho LF. Induced abortion is not a cause of subsequent preterm delivery in teenage pregnancies. Hum Reprod 1998;13:758-761.
23. Lao TT, Ho LF. Relationship between preterm delivery and maternal height in teenage pregnancies. Hum Reprod 2000:15(2):463-468.

About the Author

Dr Lao is at the Department of Obstetrics and Gynaecology, The University of Hong Kong, Queen Mary Hospital and Tsan Yuk Hospital, Hong Kong, China.

Competing Interests: None declared