



Uncomplicated Monochorionic Twins—Is Elective Preterm Delivery Mandatory?

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Abstract Often (50 % times), twin pregnancy is complicated by preterm vaginal delivery which may be due to spontaneous labor or due to medical conditions. However, it remains a debatable issue as what to do in a situation of continuing uncomplicated twin pregnancy. Some investigators suggest that because of increased risk of unexplained fetal demise after 32 weeks, elective preterm delivery should be carried out. However, there is no conclusive evidence to support or refute this suggestion and there is always a dilemma whether to allow these patients to go in spontaneous labor till term or to deliver before that. In the absence of clear evidence, it is reasonable to keep uncomplicated monochorionic twin pregnancies under close follow-up and to deliver them at 38 weeks of gestation.

Keywords Twin pregnancy · Monochorionic twins · Preterm delivery

Introduction

There is increase in the number of twin pregnancies, both monochorionic (MC) and dichorionic (DC) due to increasing use of assisted reproductive technologies.

Twins pregnancy is associated with higher perinatal morbidity and mortality as compared to the singleton pregnancy [1]. Amongst twins, chorionicity further affects the perinatal outcomes. The monochorionic pregnancies are reported to be at greater risk of perinatal mortality as compared to their dichorionic counterparts [2]. There are

reports that there is increased risk of unexplained intrauterine death after 32 weeks of period of gestation in cases of monochorionic twin pregnancy. Barigye et al. in a retrospective cohort study of monochorionic twin pregnancies reported that the prospective risk of unexpected intrauterine death of fetus (IUFD) after 32 weeks was 1/23 (95 % CI 1/11–1/63) [3].

Half of the times women with twin pregnancies have preterm birth, either due to spontaneous labor or due to some medical conditions. However, there is always a dilemma about what to do if the patient does not go in spontaneous labor.

Pathophysiology

In monochorionic twin pregnancy, both the fetuses share a single placenta. Monochorionic twin placenta is characterized by anastomoses between artery to artery, vein to vein, and artery to vein and depending upon their number and type, various complications of varying severity and onset at different times of gestations can occur.

Because of this fact, MC twins are at a higher risk of antenatal complications (discordance, twin to twin transfusion syndrome, single fetal demise etc.) and perinatal mortality as compared to DC twins. It is proposed by some investigators that once MC twins have achieved lung maturity, it is safer to deliver rather than risk the pregnancy of unexplained intrauterine fetal demise [3].

What is the Evidence?

There is no clear and robust evidence in favor of elective preterm termination of MC twin pregnancy. The current

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evidence comes from the retrospective studies, few prospective studies and none from randomized controlled trials.

Smith et al. in a USA based retrospective study involving 418 monochorionic diamniotic (MCDA) twin pregnancies reported that the risk of third trimester fetal loss was low and the likelihood of intrauterine fetal death was greater only in complicated MC pregnancies. Therefore, they concluded that in absence of any complication, elective termination is not required [4]. Simoes et al. also reported similar findings in their prospective study of 193 MCDA pregnancies [5]. They found fetal death rate of 5 out of 193 pregnancies (2.6, 95 % CI, 1.1–5.9) and prospective risk of IUFD after 32 weeks of gestation to be 1.2 % (95 % CI 0.3–4.2 %). They concluded that under strict surveillance the prospective risk of IUFD is low and they did not support the policy of elective preterm termination of MCDA pregnancies.

Breathnach et al. (a prospective cohort study) found that the risk of perinatal morbidity was lower in uncomplicated MC twins delivered at 37 weeks (5 %) as compared to those delivered at 34 weeks (41 %), however there was 1.5 % risk of having IUFD after 34 weeks in these patients. They concluded that with close fetal surveillance, MC twin pregnancy should be allowed to continue till 37 weeks [6].

Dominiques et al. (a retrospective study) also arrived at the same conclusions that the prospective risk of fetal death in MC twins at 32 weeks is same as in DC twins (1.3 vs. 0.8 %) and therefore did not recommend elective preterm delivery [7].

However, Barigye et al. (retrospective study) had clearly concluded that inspite of intensive fetal monitoring, the MC twins are at risk of unexpected IUFD and this risk increases significantly after 32 weeks and they recommend termination after 32 weeks of pregnancy [3]. Newman et al. had suggested that there was optimal outcome if dichorionicdiamniotic (DCDA) twin fetuses delivered at 38 weeks and suggested a late preterm delivery between 32 and 37 weeks for MCDA twins [8].

NICE guideline suggests that because of the risk of unexplained fetal demise even with intense fetal monitoring, delivery should be planned at 36–37 weeks in case of MCDA twin pregnancy [9]. However, American College of Obstetricians and Gynecologists (ACOG) recommends delivery of uncomplicated twins between 34 and 37 weeks of pregnancy [10].

In clinical practice, often twin pregnancies are encountered which are referred in late second or third trimester with no establishment of chorionicity. These pregnancies are followed (with and without established monochorionicity) with a close fetal surveillance (weekly ultrasonography for fetal biophysical profile, and umbilical artery

Doppler studies) and the pregnancies with uncomplicated MCDA are allowed to go in spontaneous labor till 38 weeks of pregnancy.

Conclusions

Large multicenter randomized trials are required to answer the question whether preterm delivery should be performed in cases of uncomplicated monochorionic pregnancies. Until definite evidence is available, it seems reasonable to keep these pregnancies under close surveillance and to deliver them after 38 weeks.

Conflict of interest None.

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References

1. Bjerregaard-Andersen M, Lund N, Jepsen FS, Camala L, Gomes MA, Christensen K, et al. A prospective study of twinning and perinatal mortality in urban Guinea-Bissau. *BMC Pregnancy Childbirth*. 2012;12:140.
2. Hack KE, Derks JB, Elias SG, Franx A, Roos EJ, Voerman SK, et al. Increased perinatal mortality and morbidity in monochorionic versus dichorionic twin pregnancies: clinical implications of a large Dutch cohort study. *BJOG*. 2008;115(1):58–67.
3. Barigye O, Pasquini L, Galea P, Chambers H, Chappell L, Fisk NM. High risk of unexpected late fetal death in monochorionic twins despite intensive ultrasound surveillance: a cohort study. *PLoS Med*. 2005;2(6):e172.
4. Smith NA, Wilkins-Haug L, Santolaya-Forgas J, Acker D, Economy KE, Benson CB, et al. Contemporary management of monochorionicdiamniotic twins: outcomes and delivery recommendations revisited. *Am J Obstet Gynecol*. 2010;203(2):133.e1–6.
5. Simões T, Amaral N, Lerman R, Ribeiro F, Dias E, Blickstein I. Prospective risk of intrauterine death of monochorionic-diamniotic twins. *Am J Obstet Gynecol*. 2006;195(1):134–9 Epub 2006 Apr 27.
6. Breathnach FM, McAuliffe FM, Geary M, Daly S, Higgins JR, Dornan J, et al. Perinatal Ire-land research consortium. Optimum timing for planned delivery of uncomplicated monochorionic and dichorionic twin pregnancies. *Obstet Gynecol*. 2012;119(1):50–9.
7. Domingues AP, Fonseca E, Vasco E, Moura P. Should apparently uncomplicated monochorionic twins be delivered electively at 32 weeks? *J Matern Fetal Neonatal Med*. 2009;22(11):1077–80.
8. Newman RB, Unal ER. Multiple gestations: timing of indicated late preterm and early-term births in uncomplicated dichorionic, monochorionic, and monoamniotic twins. *Semin Perinatol*. 2011;35(5):277–85.
9. Management of monochorionic twin pregnancy. Green-top Guideline no. 51. December 2008.
10. American College of Obstetricians and Gynecologists. Committee Opinion No. 560. Medically indicated late-preterm and early-term deliveries. *Obstet Gynecol*. 2013;121:908.