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Complications of Multiple Pregnancy

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Fetal complications

All twins : higher rates of the following fetal complications than singleton pregnancies, but lower rates of postterm pregnancy and macrosomia :

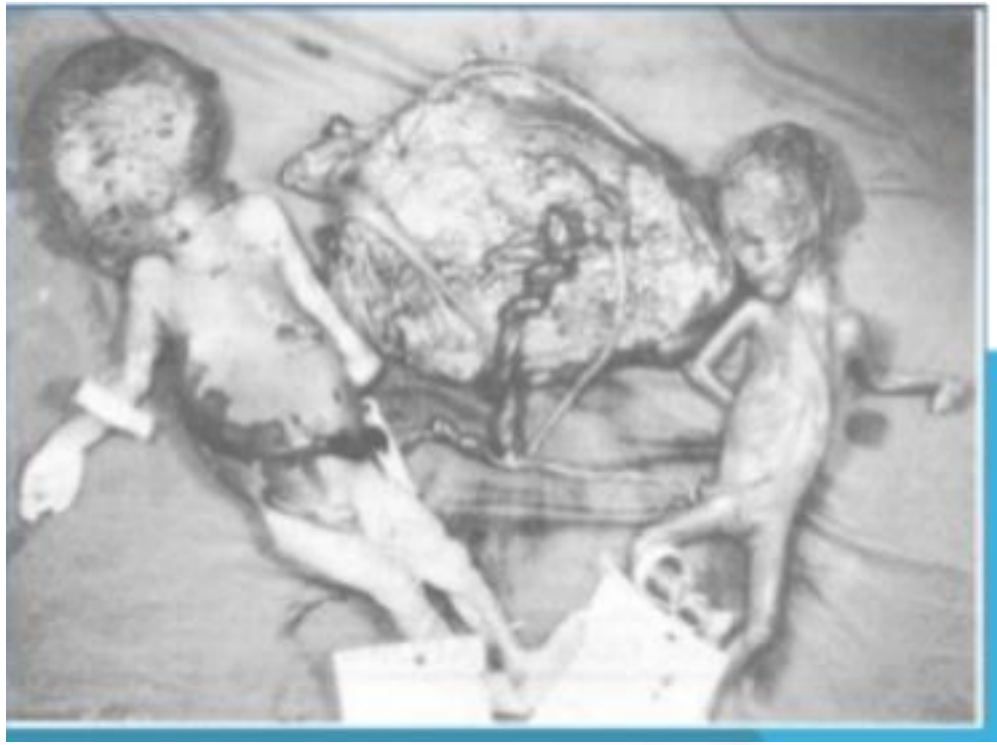
- Growth restriction
- Congenital anomalies
- Preterm delivery
- Miscarriage

Monochorionic twins :

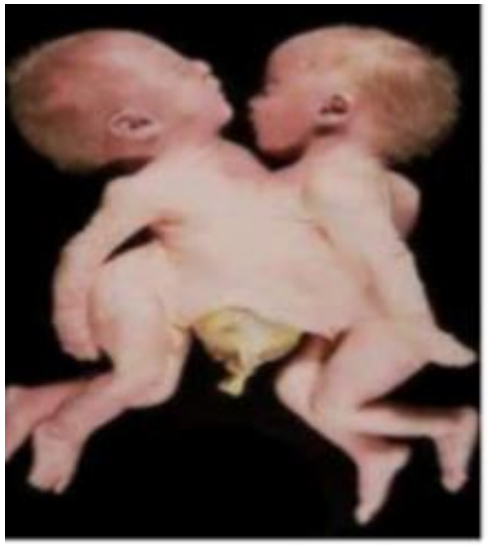
- ***Twin-twin transfusion syndrome (TTTS)*** : It is a potentially lethal disorder that develops in 10 to 15 percent of monochorionic twins.
- ***Twin anemia-polycythemia sequence (TAPS)***
- ***Twin reversed arterial perfusion sequence (TRAP)***
- ***Selective fetal growth restriction*** : Selective growth restriction is variously defined as estimated weight of one twin below the 10th percentile or discordance in estimated twin weights greater than 25 percent (discordance = weight larger twin – weight smaller twin/weight larger twin).
- ***Single fetal demise of one twin***
- ***congenital anomalies***

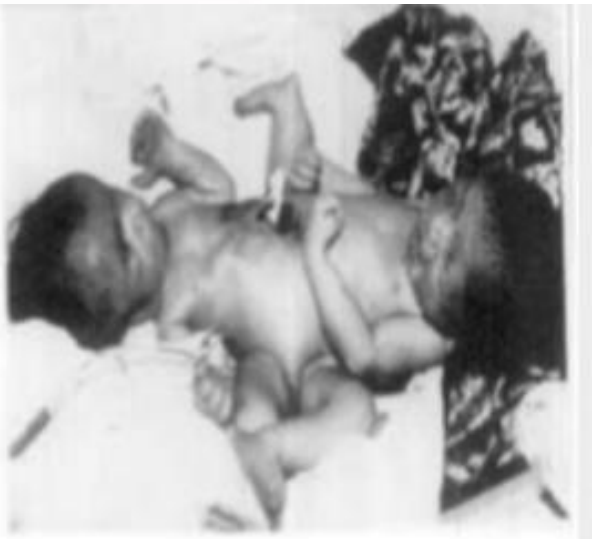
Monoamniotic twins :

- ***Intertwin cord entanglement***



- ***Conjoined twins*** **:**
  - **Detailed ultrasonography and echocardiography**, possibly with additional **magnetic resonance imaging**, are essential to determine the extent of deformity, to counsel the parents about prognosis, and to prepare for possible postnatal surgical management.
  - Delivery of potentially viable infants is always by **cesarean**.





Maternal risks and complications

Chorionicity does not appear to impact this risk in most studies .

- **Maternal hemodynamic changes** : Twin pregnancy results in greater maternal hemodynamic changes than singleton pregnancy :

❑ 20 percent higher cardiac output

❑ 10 to 20 percent greater increase in plasma volume

→ increases their risk of pulmonary edema when other risk factors are also present .

❑ Physiological anemia is common, even though red cell mass increases more in twin pregnancy than in singleton pregnancy.

- **Gestational hypertension and preeclampsia**
- **Gestational diabetes**
- **Acute fatty liver**
- **Other: pruritic urticarial papules and plaques of pregnancy (PUPPP), intrahepatic cholestasis of pregnancy, iron deficiency anemia, hyperemesis gravidarum, and thromboembolism .**

The increased risk of thrombosis relates, at least in part, to the increased prevalence of cesarean delivery and bedrest in these pregnancies.

- **Gestational hypertension and preeclampsia :** rates of gestational hypertension and preeclampsia were twice as high in twin compared with singleton pregnancies (**13** percent in twins versus **5 to 6** percent in singletons for both disorders) . **Early severe preeclampsia and HELLP syndrome** tended to occur more frequently in multiple gestations.

Zygosity and chorionicity do not appear to impact risk for preeclampsia in twin pregnancies.

Case reports have described resolution of early severe preeclampsia upon death of one twin.

NICE guideline

- **Measure blood pressure and test urine for proteinuria** to screen for hypertensive disorders at each antenatal appointment in twin and triplet pregnancies as in routine antenatal care.
- Advise women with twin and triplet pregnancies that they should take **75 mg of aspirin daily from 12 weeks until the birth** of the babies if they have one or more of the following risk factors for hypertension:
- *first pregnancy*
- *age 40 years or older*
- *pregnancy interval of more than 10 years*
- *BMI of 35 kg/m2 or more at first visit*
- *family history of pre-eclampsia.*

- آسپیرین روزانه 80 میلی گرم در مادران با سن 40 سال یا بیشتر، حاملگی اول ، فاصله بین دو بارداری بیش از 10 سال، نمایه توده بدنی 35 و بالاتر، سابقه فامیلی پره اکلامپسی از 12 هفتگی تا تولد تجویز شود.(پروتکل کشوری 96)

Other Complications

- Malpresentations
- Placenta previa
- Placental abruption
- Postpartum hemorrhage
- Abnormal cord insertion
- Cesarean delivery
- Postpartum depression
- غربالگری کاردیومیوپاتی طبق پروتکل بیماری قلبی در هفته 35 تا 37 (پروتکل کشوری 96)

Death of One Twin

Following intrauterine demise of one twin :

- The rates of **fetal demise** of the co-twin in MC and DC pregnancies were 15 and 3 percent, respectively .
- The rates of **preterm birth** in MC and DC pregnancies were 68 and 54 percent, respectively .
- The rates of **abnormal postnatal cranial imaging** in MC and DC pregnancies were 34 and 16 percent, respectively .
- The rates of **neurodevelopmental impairment** of the co-twin in MC and DC pregnancies were 26 and 2 percent, respectively .

Management

- **Dichorionic twins :** death of one twin is not, by itself, a strong indication for delivery of the surviving twin.
  - ادامه مراقبت های بارداری و ختم بارداری در هفته 38 تا 40(پروتکل کشوری 96)

●Monochorionic twins :

- **When one twin dies prior to viability**, our practice is to discuss the option of pregnancy termination, although, as stated above, the risk to the co-twin is not clear when the death occurs in the first trimester.
- **If fetal assessment after 26 weeks of gestation suggests impending death rather than demise of one twin of a monochorionic pair, we suggest prompt delivery of both twins .**
- **Anti-D immune globulin prophylaxis is recommended for Rh(D)-negative women**

Isuog Guideline

- When single IUD occurs in a MC twin pregnancy, the woman should be managed at **a tertiary-level center** .
- **Conservative management** (i.e. continuing the pregnancy) is often the most appropriate course of action.
- **Detailed counseling** of the parents is required.

- If conservative management is chosen, **fetal biometry and assessment of umbilical and MCA Doppler should be scheduled every 2 – 4 weeks, and delivery should be considered at 34 – 36 weeks, after a course of maternal steroids.(isoug)**
- **The fetal brain should be imaged around 4 – 6 weeks after the death o**f the cotwin to search for evidence of cerebral morbidity . Neurodevelopmental assessment of the surviving twin at the **age of 2 years** should be recommended.(isoug , RCOG)
- There have been some reports of **intrauterine transfusion of an anemic** surviving cotwin, but whether this prevents long-term neurological morbidity is unknown. This may improve fetal survival without reducing the long-term risks of neurological morbidity.

Take home message !!

Indications for referral to a tertiary level fetal medicine center (NICE)

- Seek a consultant opinion from a tertiary level fetal medicine center for:
  - ***MCMA twin pregnancies***
  - ***MCMA triplet pregnancies***
  - ***MCDA triplet pregnancies***
  - ***DCDA triplet pregnancies***
  - ***pregnancies complicated by any of the following***:
    - ***discordant fetal growth***
    - ***fetal anomaly***
    - ***discordant fetal death***
    - ***feto-fetal transfusion syndrome***.

- در موارد دوقلوهای به هم چسبیده یا حاملگی مولار در یکی از قل ها ادامه مراقبت ها توسط پریناتولوژیست انجام شود(پروتکل کشوری 96)

References

- Up-to-date 2018
- NICE guideline 2014
- ISUOG guideline 2017
- RCOG guideline 2016
- ACOG bulletin 2014

Forough Mehr Boutique Hotel-Shiraz-Iran

www.perinatalrc.sums.ac.ir