What is Twin to Twin Transfusion Syndrome (TTTS)?

Identical twins who share a placenta (monochorionic twins) share blood connections within the placenta. TTTS occurs when the connections become unbalanced and there is an unequal flow of blood between the twins.
In cases of TTTS, one twin, ('the recipient') receives too much blood. Pumping this extra blood puts the recipient’s heart under stress. To try and get rid of the excess blood, the recipient passes a lot of urine and, as a result, is surrounded by a surplus of amniotic fluid. The recipient is often the larger twin and faces a risk of complete heart failure.

The other twin ('the donor') does not receive enough blood and becomes anaemic. The larger recipient who occupies more space will often push the donor up against the wall of the uterus. For both these reasons, the donor’s growth is restricted and they are often the smaller twin. The donor will have little or no urine in their amniotic sac. Their anaemia and growth restriction can be fatal.

How common is TTTS?

TTTS is not hereditary or genetic.

Statistics vary but it is now believed to affect as many as 1 in 1000 pregnancies in the UK.

When does TTTS occur?

TTTS can occur at any time during pregnancy.

There are two forms of TTTS:

1. **Chronic TTTS** appears in early pregnancy (12-26 weeks gestation). Because delivery cannot be expedited at this early stage of gestation, and the babies are going to be exposed to the placental abnormality for longer, most of these babies will not survive without intervention and treatment.

2. **Acute TTTS** occurs suddenly and signifies a major difference in the blood pressures between the twins. It can occur as late as during delivery. If detected promptly and at a sufficiently late gestational age, these twins may have a greater chance of surviving, if delivered in a timely fashion.

How is TTTS detected?

TTTS is usually detected using an ultrasound
scan. It is sometimes identified through the use of a doppler which measures the blood flow through the placenta.

Monochorionic twins should be monitored by scanning every 2 weeks from 16 to 24 weeks. If there are early signs of TTTS weekly scans should ensue and the mother should be referred to a fetal medicine specialist.

TTTS is reportedly easier to detect in monochorionic-diamnionic pregnancies, where the twins share a placenta, but have their own amniotic sac, than in monochorionic-monoamniotic pregnancies where the twins share the placenta and one amniotic sac.

**What are the warning signs of TTTS?**

Warning signs in the mother include:

- A feeling of rapid growth of the uterus
- A large uterus
- Abdominal pain or tightness
- Premature contractions
- Sudden increase in weight
- Swelling of hands and feet in early pregnancy

Warning signs on the ultrasound scans include:

- Excess amniotic fluid in the sac of one twin (the recipient). This twin’s bladder will usually appear full
- A small amount, or no amniotic fluid in the sac of the other twin (‘the donor’). This twin’s bladder will be empty or may be impossible to see
- Distension of the uterus
- Growth discordance. (A difference of 20% is thought to be significant but this varies depending on the gestational age)
- Hydrops fetalis – a build up of fluid in one twin (the recipient) associated with heart failure.

**What are the treatments for**
TTTS?

These include:

- Early delivery, if the twins are of sufficient maturity
- Amnioreduction: draining of the excess amniotic fluid from the fuller sac. This gives more space to the donor, stabilises the recipient and reduces maternal discomfort.
- Septostomy: creation of a hole in the amniotic membranes shared by the twins allowing for an equalising of their fluid levels.
- Laser treatment: to seal off vessels in the placenta, rendering the blood flow to both twins more equal.

TTTS is a complex area of obstetrics both in terms of detection and treatment. If identified promptly and managed appropriately adverse outcomes can be avoided.

_Claudia Hillemand is a solicitor at Bolt Burdon Kemp and specialises in clinical negligence and birth injury claims._

_If you or a loved one are concerned about treatment you have received contact her free of charge and in confidence on 020 7288 4843 for specialist legal advice._

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