



SASUOG

South African Society for Ultrasound in Obstetrics and Gynaecology

Patient information leaflet - Twin-to-Twin Transfusion Syndrome

Twin-to-twin transfusion syndrome (TTTS) is a rare pregnancy complication that can affect identical twins. TTTS can only occur in pregnancies where twins share one placenta (afterbirth). These pregnancies are known as monochorionic (mono = one, chorionic = placenta). About 10% of monochorionic pregnancies develop TTTS.

In a shared placenta, there are often connections between the blood vessels of the twins allowing blood to flow from one twin to the other or vice versa. If the flow between the twins is unbalanced, one twin (the donor) can give away more blood to the other twin (the recipient) than it receives. The recipient twin then has too much blood and can develop complications from being fluid overloaded, including heart failure. The donor twin runs the risk of not having enough blood to grow and survive. If TTTS is severe and untreated it often results in a miscarriage or very premature delivery with all the risks thereof, including death or handicap.

For some cases of TTTS, surgical treatment with laser can be offered. This procedure treats the cause of TTTS by closing off the blood vessels connecting the circulation of the two twins. A thin instrument called a fetoscope is inserted under ultrasound guidance through the mother's abdominal wall and uterus into the cavity of the womb. The fetoscope is connected to a camera and a light source and this enables the doctor to see the blood vessel connections on the surface of the placenta. If the connections are well seen, a thin laser fibre is fed through the fetoscope and the connections are then obliterated using the laser, under direct visualization. Often there is a lot of extra amniotic fluid, and this can be drained during the same procedure. The surgery can be done under local anaesthetic and sedation, and you may need to be monitored in hospital for 24 hours. Laser treatment does not guarantee survival of both twins, although one or both twins would survive in two out of three cases. The risks to the mother are low, similar to those of laparoscopic (keyhole) surgery. After the surgery there is still a risk of preterm delivery, recurrence or reversal of TTTS, or imbalance in blood concentration. Survivors have around 10% risk of some form of long-term handicap.

Only one centre in South Africa currently offers this treatment:

- Cape Town: Panorama Perinatology: <https://www.perinatal.co.za/>

It is possible to travel overseas for laser treatment. There are obviously significant logistical and cost implications but, in some cases, it could be a feasible option as some busy overseas units have more experience and have treated more cases and the outcomes may therefore be better.

Other options to manage TTTS are:

- expectant management, a “wait and see approach” which unfortunately has a small survival chance for either twin in all but the mildest stage of TTTS
- pregnancy termination before 24 weeks – this is the only way of completely removing the risk of having one or two handicapped survivors
- draining the excess amniotic fluid of the recipient to reduce maternal discomfort and perhaps reduce the risk of severe prematurity somewhat
- selective cord occlusion where the blood supply to one of the twins (usually the sickest one) is occluded with an instrument placed inside the womb. This causes the death of this twin but prevents further complications from ongoing TTTS for the healthier twin.

These options are all difficult but can be discussed with a fetal medicine specialist once the pregnancy and the fetuses have been fully assessed.

If you are concerned that you might have TTTS, make sure that your obstetrician refers you to a fetal medicine specialist for full evaluation and comprehensive counselling and advice.