

Selective Laser Photocoagulation of Communicating Vessels Brings New Hope to Twin-twin Transfusion Syndrome

Twins occur naturally in 80 pregnancies. About 1 in 40 twin pregnancies may have twin-to-twin transfusion syndrome (TTTS). In Hong Kong, there is on average about 10 pairs of twins having this syndrome annually.

TTTS happens in identical twin pregnancies and is a result of unbalanced blood transfusion along placental vascular anastomoses between the twins.

The twin losing blood is called the donor, and the twin receiving blood is called the recipient. Over time the blood volume of the donor becomes lower and fails to grow properly. The blood volume of the recipient, on the other hand, becomes higher and the heart needs to pump hardly, eventually heart failure occurs.

There are 5 stages of TTTS. Selective laser photocoagulation of communicating vessels is usually recommended for the stages 3 and 4 of TTTS. It is the use of laser light to coagulate the communicating blood vessels on the surface of the placenta to stop the unbalanced blood transfusion between the twins. Generally, endoscopic laser photocoagulation has been shown to result in about 70-80% survival rate of at least one of the twins, when compared with the traditional serial amnioreduction of 40-60%.

Other treatments for TTTS such as septostomy and umbilical cord ligation (umbilical cord coagulation) have also been performed in western countries.