11 years of totally implantable vascular devices in a paediatric cystic fibrosis population, a retrospective review

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Objectives: Totally implantable vascular devices (TIVAD) are increasingly used in children with cystic fibrosis (CF) as they require regular courses of intravenous antibiotics for chronic infections. We aimed to review our use of these devices within our paediatric CF population.

Methods: We retrospectively reviewed all TIVADs inserted in our hospital to paediatric CF patients over the past 11 years.

Results: A total of 34 TIVADs were inserted into 27 children with CF. Some children received more than one TIVAD implantation during the review period. The median age of insertion was 13 years (range: 4 months to 16 years). 79% of TIVADs were inserted into patients colonised with Pseudomonas aeruginosa. The main use of the TIVAD was for antibiotics; two children received TPN via their TIVAD. Two TIVADs had their sites changed in theatre as the initial site was unsuccessful. Short-term post-operative complications were documented in 6 TIVAD insertions but did not change management. The main long-term complication was occlusion (17.6%). Infection of the TIVAD occurred in 11.8%. Three of the four infected TIVADs grew Candida. All infected TIVADs were removed. Dislodgement occurred in 8.8%. Those removed (14 cases) had a mean duration of 3.3 years (range: 4 months to 7 years).

Conclusions: TIVADs appear to be reliable and safe. They provide excellent vascular access over many years with low complication rates. TIVADs are inserted by consultant paediatric surgeons within our unit. They are cared for and flushed regularly, mostly by the parents. TIVAD care and infection control techniques are taught and regularly revised with the parents in order to minimise complications.