Hemodialysis Access Flow Restrictor Device

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Technology description

Summary

Problem or Unmet Need:
In the US, about 400,000 patients require chronic hemodialysis due to end-stage renal disease (ESRD). This population is expected to grow at ~7% per year due to the rising incidence of Type II diabetes. The current options for vascular access increase cardiac load by increasing blood flow at the site of the graft or fistula. A method for allowing access to the high blood flow necessary for dialysis, but which also reduces the cardiac load during non-dialysis periods, would decrease cardiac incidents and mortality for chronic dialysis patients.
Details of the Invention:
This technology is a stent graft that allows flow rates high enough for dialysis while reducing heart load. A catheter-deliverable stent graft optimizes entry and exit geometries to allow flow rates high enough for dialysis while reducing heart load.

Application area

-- This invention can be used as a graft stent providing low risk vascular access in patients requiring regular dialysis.

Advantages

-- One of the main problems caused by other vascular access devices is that optimal blood flow is achieved by creating high flow rate through the shunt, resulting in thrombosis. In this technology, however, the improved design optimizes entry and exit geometries to allow flow rates high enough for dialysis while reducing heart load.

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