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## Ottava Giornata della Ricerca della Svizzera Italiana

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### Modulo per la sottomissione abstract di ricerca CLINICA

**Titolo** (massimo **15 parole**)

Transcatheter Aortic Root Replacement. A preliminary study.

**Autori** (cognome e iniziali, es: Grassi L.)

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**Affiliazioni** (ospedale o istituto, servizio o reparto, indirizzo, es: Ospedale Regionale di Lugano, Servizio di angiologia, Lugano)

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**Testo** (massimo **250 parole**, preferibilmente in italiano (accettato anche in inglese), suddiviso in Introduzione, **Metodi, Risultati, Conclusioni e Finanziamento**)

Objective: TAVR is widely used in elderly patients with aortic stenosis. However, some patients (25%) have dilated aortic roots that are not addressed with TAVR. The concept of the new TARR technique combines aortic valve replacement and aortic root replacement in a single-stage transcatheter procedure. We present a preliminary bench test.

Methods: 3D-printed aortic roots based on pre-operative CT-scans of selected patients with root dilation were prepared. Hydrodynamic tests were performed on 3D printed models with original configuration. Then, a new device integrating a trans-catheter valve, an aortic prosthesis and two conduits for coronary perfusion was assembled. The device was deployed inside the 3D-printed aortic root and hydrodynamic tests were performed.

Results: mean non-pulsatile coronary flows for the standard root at 60, 80 and 100 mmHg were 1066, 1307, 1460 mL/min. for the left coronary and 146, 233, 233 mL/min for the right coronary. Mean coronary flows for the root with the deployed TARR device at 60, 80 and 100 mmHg were 1053, 1306, 1502 mL/min for the left coronary artery and 110, 146, 162mL/min for the right coronary artery.

Conclusions: this preliminary report shows that the TARR technique employed in these tests guarantees an adequate coronary flow in 3D-printed aortic roots when the device is deployed.

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**Visto superiore** (prego indicare Nome e Cognome del superiore)

Stefanos Demertzis

**Criteria per sottomissione Abstract:**  
NO Case report  
NO Abstract senza nessun risultato  
VISTO da un superiore

**Invio Abstract**

