Reviewer's report

Title: A new type of aortic valved stent with good stability and no influence on coronary artery

Version: 1 Date: 27 July 2013

Reviewer: Guido Gelpi

Reviewer's report:

Major Compulsory revision

The idea of a new aortic valve for TAVI should be always accepted as a potential innovation in the cardiovascular field, but the poor presentation of a new idea can lead immediately to its death.

In the paper the new aortic valved stent is partially described but no data are reported about stability (does it mean no migration? good performance?) and only few data are reported about coronary artery flow.

After a long, useless introduction no data or methods are reported regarding in vitro testing of the valve. It seems that only a subjective method was used to prove the stability of the valve.

No data are reported regarding echographic or angiographic control (in vivo test).

In the discussion the authors pointed out that with the two others commercially available transcatheter aortic valve coronary obstruction can occur and with their new valve no coronary flow reduction was observed in vitro when the valve was implanted above the valve leaflets. The don’t take into account that coronary obstruction happen mainly due to the calcification of the aortic valve leaflet and they tested into healthy aortic valves. Moreover it is impossible to understand what they mean above valve leaflet (STJ, ascending aorta?)

The authors report: “Quaden et al reported that using a high-pressure water stream to endovascularly resect human calcified aortic valves could easily lead to thromboembolism since it is hardly to capture all the tissue fragments of disordered valves [27]. Bonhoeffer et al [28] has developed an innovative system for percutaneous stent implantation combined with valve replacement while the operation is very complicated and not easy to be popularized. No obvious shifting was observed when the new type of aortic valved stent was released in the middle of the valve leaflets suggesting that the special shape of our aortic valved stent increased the stability at the aortic root.” I don’t find any correlation between the stability of their
valve with the two techniques reported as an example

The weakest point of the manuscript is the writing, it seems that the paper has been submitted without reading it twice!! Incomplete words (mached, rcleased, vaves, valv); words repeated twice there there, the the etc; terms used improperly (aortic vale was punctured ?); sentences with no sense (Therefore, the retrograde approach may be considerably safer by avoiding potential guidewire injury to the mitral valv though this approach may be associated with greater risk of vascular access site complications

Minor Essentials revision
tables with angiographic and echographic data
Discretionary revisions
Review the manuscript with an english better translator

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'