

*Press release*

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## **Transcatheter Aortic Valve Implantation (TAVI): Study at the Inselspital reveals differences between heart valve systems**

**Replacement of defective aortic valves through implants is performed 400-500 times a year alone at the Inselspital, Bern University Hospital. There are two options for implantation via a catheter. For the first time, the two systems were compared to each other in a direct comparison.**

The aortic valve is the heart valve that must be replaced most frequently in the course of a lifetime. In older patients, the valve is usually replaced using the catheter procedure. Every year more than 400 heart valves are replaced at the Inselspital. Various systems are available for this purpose. For the first time, two of the most frequently used systems were directly compared to each other. Approximately 10% of elderly Swiss persons rely on the replacement of their aortic valve. Around 95% of these cases can be treated using a procedure that is performed via the main artery (aorta), so avoiding a costly and stressful surgical intervention. This procedure is called Transcatheter Aortic Valve Implantation (TAVI). It can be performed under local anaesthesia and on a beating heart. Two versions are available for attaching the aortic valve bioprostheses. They are either released and implanted with the help of a balloon (balloon-expandable prosthesis) or they unfold automatically after implantation, when a cover is withdrawn (self-expanding prosthesis).

### **First large comparative study**

This current study has now, for the first time, directly compared two of the most frequently used types of prostheses. A study was carried out with 20 participating centres in Switzerland, Germany, the Netherlands and England. A total of 739 persons, 57% of whom were women, were investigated. The observation period was 30 days. The Insel Group AG sponsored the study. The large-scale study was presented for the first time at the American Cardiology Congress in Chicago and simultaneously published in the renowned specialist journal «The Lancet».

### **Results of the direct comparison**

Clinically significant differences between the two types of bioprostheses can be demonstrated already 30 days after the procedure. Of greatest importance is the tightness of the new valves and functional disorders of the kidneys.

The results of the study indicate that in the first thirty days after implantation, the self-expanding version cannot be regarded as fully equivalent to the balloon-expandable version.

### **Conclusions**

The results of the study give first indications regarding the suitability of the different modern types of heart replacement valves. These results must now be supplemented and expanded with data from studies of a longer duration (more than 30 days) and, if possible, with long-term results on patient mortality. The choice of aortic valve bioprostheses in specific cases depends on several factors. A team of cardiac specialists has to decide which system is best suited to each individual case.

### **Link to study:**

- Lanz, Jonas, Won-Keun Kim, Thomas Walter et al., (2019): Safety and efficacy of a self-expanding versus a balloon-expandable bioprosthesis for transcatheter aortic valve replacement in patients with symptomatic severe aortic stenosis: a randomised non-inferiority trial. Lancet 2019; 394:1619-28

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### **Insel Gruppe**

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