Questions

Do you want to have

- Main stem stenting in a hospital without a cardiac surgical unit?
- CABG in a hospital with < 200 heart surgeries/year?
- TAVI in a hospital with < 50 TAVI/year?
- TAVI in a hospital without a cardiac surgical unit?
Coronary Angiographies (CA) and Percutaneous Coronary Interventions (PCI) in all centers during the year 2014 in Switzerland

37 centers
### Transcatheter Aortic Valve Implantation (TAVI) in all Centers During the Year 2014 in Switzerland

<table>
<thead>
<tr>
<th>Hospital/Center</th>
<th>Transfemoral, transtelebran, transcatheter TAVI</th>
<th>Transapical, transaortic TAVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genève Hôpital de La Tour</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Kreuzlingen Herz-Neuro-Zentrum</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Aarau Kantonsspital</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Aarau Hirslanden Klinik</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Lausanne Clinique Cecil</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Bern Klinik Beau Site</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Genève Hôpitaux Universitaires</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Zürich Triemli Stadtspital</td>
<td>36</td>
<td>9</td>
</tr>
<tr>
<td>Lugano Cardiocentro Ticino</td>
<td>38</td>
<td>6</td>
</tr>
<tr>
<td>Lausanne Hospitalier universitaire</td>
<td>41</td>
<td>13</td>
</tr>
<tr>
<td>Luzern Kantonsspital</td>
<td>56</td>
<td>7</td>
</tr>
<tr>
<td>Zürich Klinik im Park</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Basel Universitätsspital</td>
<td>77</td>
<td>30</td>
</tr>
<tr>
<td>Hirslanden Klinik Zürich</td>
<td>103</td>
<td>8</td>
</tr>
<tr>
<td>Zürich Universitätsspital</td>
<td>179</td>
<td>6</td>
</tr>
<tr>
<td>Bern Universitätsspital</td>
<td>223</td>
<td>28</td>
</tr>
</tbody>
</table>

16 centers
Surgical back-up for TAVI: the PRO Arguments

Guidelines

Decision making

Complications and surgical back-up

Experience in Bern/Aarau
Guidelines on the management of valvular heart disease (version 2012)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAVI should only be undertaken with a multidisciplinary ‘heart team’ including cardiologists and cardiac surgeons and other specialists if necessary.</td>
<td>I</td>
<td>C</td>
</tr>
<tr>
<td>TAVI should only be performed in hospitals with cardiac surgery on-site.</td>
<td>I</td>
<td>C</td>
</tr>
</tbody>
</table>

& Indication:

TAVI is indicated in patients with severe symptomatic AS who are not suitable for AVR as assessed by a ‘heart team’ and who are likely to gain improvement in their quality of life and to have a life expectancy of more than 1 year after consideration of their comorbidities.
Outcomes of transfemoral transcatheater aortic valve implantation at hospitals with and without on-site cardiac surgery department: insights from the prospective German aortic valve replacement quality assurance registry (AQUA) in 17 919 patients

**Conclusion**

Although patients undergoing TAVI at hospitals without on-site CS department were older and at higher predicted perioperative death risk, major complications, and in-hospital mortality were not statistically different, suggesting the feasibility and safety of Heart Team-based TAVI at non-CS sites. These findings need confirmation in future randomized study.
Adherence of Catheterization Laboratory Cardiologists to American College of Cardiology/American Heart Association Guidelines for Percutaneous Coronary Interventions and Coronary Artery Bypass Graft Surgery
What Happens in Actual Practice?

Edward L. Hannan, PhD; Michael J. Racz, PhD; Jeffrey Gold, MD; Kimberly Cozzens, MA; Nicholas J. Stamato, MD; Tia Powell, MD; Mary Hibberd, MD; Gary Walford, MD

Background—The American College of Cardiology and the American Heart Association have issued guidelines for the use of coronary artery bypass graft surgery (CABG) and percutaneous coronary interventions (PCI) for many years, but little is known about the impact of these evidence-based guidelines on referral decisions.

Methods and Results—A cardiac catheterization laboratory database used by 19 hospitals in New York State was used to identify treatment (CABG surgery, PCI, medical treatment, or nothing) recommended by the catheterization laboratory cardiologist for patients undergoing catheterization with asymptomatic/mild angina, stable angina, and unstable angina/non–ST-elevation myocardial infarction between January 1, 2005, and August 31, 2007. The recommended treatment was compared with indications for these patients based on American College of Cardiology/American Heart Association guidelines. Of the 16,142 patients undergoing catheterization who were found to have coronary artery disease, the catheterization laboratory cardiologist was the final source of recommendation for 10,333 patients (64%). Of these 10,333 patients, 13% had indications for CABG surgery, 59% for PCI, and 17% for both CABG surgery and PCI. Of the patients who had indications for CABG surgery, 53% were recommended for CABG and 34% for PCI. Of the patients with indications for PCI, 94% were recommended for PCI. For the patients who had indications for both CABG surgery and PCI, 93% were recommended for PCI and 5% for CABG surgery. Catheterization laboratory cardiologists in hospitals with PCI capability were more likely to recommend patients for PCI than hospitals in which only catheterization was performed.

Conclusions—Patients with coronary artery disease receive more recommendations for PCI and fewer recommendations for CABG surgery than indicated in the American College of Cardiology/American Heart Association guidelines. (Circulation. 2010;121:267-275.)
Major complications of TAVI

- Bleeding at vascular access site (5-20%)
- Pericardial tamponade (0.2-4.5%)
- Rupture of the aortic root (<1%)
- Coronary occlusion (<0.5%)
- Intra-cardiac or -aortic loss of the device (?)
Major complications of TAVI

- Bleeding at vascular access
- Pericardial tamponade
- Rupture of the aortic root
- Coronary occlusion
- Loss of the device

- Ballon? Covered stent? Surgery?
- Pericardial drainage (open?)
- Surgery – high mortality!
- PCI / CABG
- Interventional rescue? Surgery
In case of complication.... (iatrogenic...)

- Majority of patients were operated on (when the surgical team was called) with acceptable morbidity and mortality (even though they were described as inoperable prior to the procedure)
- Outcome worse than after elective AVR
Emergent surgery after TAVI is demanding!
Need for experienced surgical teams
Rescue surgery after TAVI

Complex conventional AVR
Reconstruction of the aortivannulus
Alternative canulation
Moderate hypothermia or DHCA needed
Other concomitant surgery needed
Surgical back-up

- Similarities between PCI and TAVI
- Changes in decision making
- Complications are life-threatening
- Complications occur in operable patients
- More important in medium (low) risk patients

Surgical standby is necessary!
Surgical standby still necessary? The PRO arguments.

Prof. Dr. med. L. Englberger
Chefarzt Herzchirurgie
Universitätsklinik für Herz- und Gefässchirurgie, Bern

Herzchirurgie Aarau
HIRSLANDEN MEDICAL CENTER