Presentation on US Hospital Websites of Risks and Benefits of Transcatheter Aortic Valve Replacement Procedures

Adequate presentation of risks and benefits of medical therapies is essential to informed decision making by patients.1 Transcatheter aortic valve replacement (TAVR) has been recently approved by the US Food and Drug Administration for the treatment of severe aortic stenosis among carefully selected patients; recent randomized clinical trials have identified important positive and negative outcomes of TAVR in these populations, including twice the risk of stroke for patients undergoing TAVR vs those undergoing open aortic valve replacement.2,3 Since 78% of all adults in the United States seek out health information online,4 we assessed the information regarding known risks and benefits of TAVR made available to the public on the websites of US hospitals currently performing TAVR procedures.

Methods | Between May 16 and June 25, 2014, we reviewed the websites of all 317 hospitals listed in the Society of Thoracic Surgeons and the American College of Cardiology’s Transcatheter Valve Therapy Registry using common search engines.5 One of us (M.L.K.) reviewed each site for English-language pages mentioning TAVR and abstracted information into a standardized form regarding terms related to 11 potential risks and 11 potential benefits of TAVR compared with open aortic valve replacement that we defined a priori based on our review of a major randomized trial.2,3 Fisher exact tests were calculated using Stata, version 12.0 (StataCorp LP), to determine statistical significance between certain categorical variables. In addition, we obtained information regarding hospital characteristics using data from the 2013 American Hospital Association Annual Survey. This study was deemed exempt from review by the Tufts University School of Medicine Institutional Review Board.

Results | We identified functioning websites for all 317 hospitals listed on the Transcatheter Valve Therapy Registry; of these, we excluded 33 websites that had no English-language pages mentioning TAVR and 22 websites that only provided a link to information on TAVR hosted on another hospital’s website. Of the 262 hospitals with pages describing TAVR, 213 (81.3%) were nongovernmental, nonprofit institutions. A total of 214 (81.7%) hospitals had a major or minor teaching affiliation, 255 (97.3%) were located in an urban area, and 183 (69.8%) had more than 400 beds (Table). Nearly all the websites (260 [99.2%]) described at least 1 benefit of TAVR relative to open aortic valve replacement. The most common benefits mentioned were the lower degree of invasiveness of TAVR compared with open aortic valve procedures (mentioned in 250 websites [95.4%]), the potential for more rapid recovery (125 [47.7%]), the lack of requirement for cardiopulmonary bypass (120 [45.8%]), and improved quality of life (119 [45.4%]). Sixty-nine websites (26.3%) mentioned 1 or more risks of TAVR, which is significantly fewer than those mentioning benefits (P < .001). Risks listed on these websites included stroke or transient ischemic attack (mentioned on 48 websites [18.3%]), vascular complications (36 [13.7%]), death (31 [11.8%]), and unknown long-term valve durability (28 [10.7%]). Numerical quantitative information was provided more frequently for benefits than for risks (P < .001), with any benefit term quantified on 97 websites (37.0%) while any risk term was quantified on only 12 websites (4.6%) (Figure).

Discussion | Although US hospital websites universally discuss the benefits of TAVR, they rarely present information on the potential risks of this procedure to the public; of 262 websites reviewed, 99.2% included information on specific benefits of TAVR whereas only 26.3% presented any information...
on specific risks associated with this procedure. Moreover, while websites rarely presented quantitative information about either risks or benefits, benefits were quantified more frequently than risks. Our findings suggest that web-based advertising of TAVR to the public by hospitals may understate the established risks of this procedure and provide little context for the magnitude of those risks to inform patient decision making. Hospitals may promote appropriate use of TAVR by presenting more balanced information regarding TAVR’s risks and benefits.

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Invited Commentary

Risks of Imbalanced Information on US Hospital Websites

Conducting a Google search for a disease is how many people get information about their illness and possible treatments. In