

Trans Catheter Aortic Valve Implantation Under Conscious Sedation Versus General Anaesthesia with Intubation

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Background: Trans catheter aortic valve implantation (TAVI) is currently being evaluated in a clinical trial for patients with severe aortic stenosis (AS), who are considered high-risk surgical candidates. Most TAVI using the Edwards SAPIEN valve have been done under general anaesthesia which carries the risk of respiratory complications. The present study aimed to examine the feasibility and safety of TAVI under conscious sedation and compare the clinical outcome to those patients who underwent general anaesthesia.

Methods: The analysis included 48 consecutive patients undergoing TAVI guided by trans-esophageal echocardiography using the Edwards SAPIEN transcatheter heart valve system via the trans femoral approach between July 2007 and July 2009. Conscious sedation was given by anesthesiologists in one of two protocol regimens: 10mg Ketamine with Propofol 10mcg/kg/min up to 75 mcg/kg/min or Dexmetomidine 0.3-0.7mcg/kg/hr. The crossover rate to general anaesthesia and the clinical outcome related to the anaesthesia were compared.

Results: The Edwards SAPIEN implantation was performed in 48 patients. 34 (70.8%) with conscious sedation, and 14 (29.1%) with general anaesthesia and intubation. The baseline characteristics of the two groups are summarized in Table 1. Of the patients with conscious sedation 4(11.7%) converted to general anaesthesia with intubation. The indications for crossover were hemodynamic compromise with shock after balloon valvuloplasty or valve deployment (n=3) and when high access retroperitoneal approach was required (n=1).
Conclusion: TAVI can be performed in the majority of the cases with controlled conscious sedation avoiding the necessity of general anaesthesia with low conversion rate to general anaesthesia. This leads to shorter procedure time, and may shorten the stay in the intensive care unit and in hospital.

	Conscious sedation (N=34)	General anaesthesia (N=14)	P
Mean age (years)	82.7±5.1	84.4±7.8	0.4
Female (%)	19(55.8)	4(28.5)	0.3
STS	11.6±3.5	10.9±4.3	0.5
Logistic Euro score	39.1±21.4	25.9±15.1	0.02
Ejection fraction (%)	53.1±16.0	53.2±15.1	0.9
COPD (%)	5(14.7)	1(7.1)	0.9
Aortic valve area (cm ²)	0.63±0.13	0.61±0.11	0.6
Surgical access (%)	21(61.7)	14(100)	<0.001
23mm valve (%)	23(67.6)	7(50)	0.25
Procedure duration (minutes)	136.6±56.3	213.7±93.0	0.01
ICU stay (hours)	61.3±58.3	70.0±52.4	0.6
Days from procedure to discharge (days)	7.6±4.8	10.7±9.3	0.2