

# Polypharmacy and Transcatheter Aortic Valve Implantation

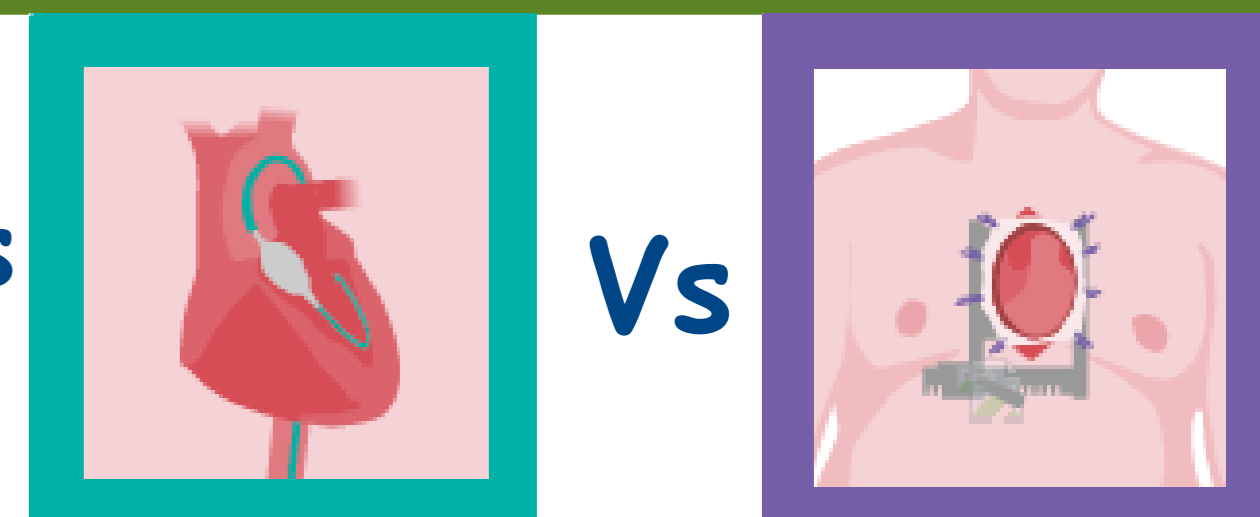
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## BACKGROUND:

Over the last decade, transcatheter aortic valve implantation (TAVI) has emerged as a novel and less invasive alternative to traditional surgical aortic valve replacement (SAVR) for the management of severe aortic stenosis (AS) in higher risk elderly patients.

## OBJECTIVES:

Our aim was to evaluate the frequency of polypharmacy (treatment with more than four medications per person) and to analyze the ATC class of medications prescribed in this fragile population.



## METHODS:

We analyzed data of patients whose medical procedures included TAVI or SAVR, between January 2016 and October 2017. We identified a total of 903 patients who underwent TAVI (n=228) or SAVR (n=675), whose clinical characteristics were assessed by calculating the Charlson comorbidity index (CCI).

## RESULTS AND DISCUSSION:

Patients in the TAVI group were more likely to be older ( $p < 0.0001$ ), female ( $p < 0.01$ ), and to have a higher CCI ( $p = 0.05$ ). No significant difference in Polypharmacy was observed between the two groups at discharge, after 6 and 9 months from the hospitalization.

In both groups, the most prescribed drugs at discharge were the antithrombotic agents (50.1% TAVI-40.3% SAVR;  $p = 0.005$ ), followed by the drugs for peptic ulcer and gastroesophageal reflux disease (29.4% TAVI-33.6% SAVR;  $p = 0.24$ ), high-ceiling diuretics (19.3% TAVI-33.6% SAVR;  $p < 0.0001$ ) and beta blocking agents (20.2% TAVI-28.1% SAVR;  $p = 0.018$ ). The same evaluations on the prescribed medications were also made after 6 and 9 months.

PATIENTS INCLUDED			
	TAVI Group n=228	SAVR Group n=675	p value
Female (n, %)	135 (59%)	291 (43%)	<0,01
Age (mean, SD)	82,8 (7,2)	71,7 (10,4)	<0,0001
≤75 years (n, %)	35 (15,4%)	393 (58,2%)	-
76-85 years (n, %)	109 (47,8%)	272 (40,3%)	-
≥86 years (n, %)	84 (36,8%)	10 (1,5%)	-
CCI≥2 (n, %)	90 (39,5%)	199 (29,5%)	0,05
PATIENTS IN POLYPHARMACY (>4 drugs prescribed)			
Discharge-within 6 days (n, %)	65 (29%)	236 (35%)	0,07
Within 6 months (n, %)	188 (82%)	571 (85%)	0,45
Within 9 months (n, %)	190 (83%)	571 (85%)	0,65

### MOST PRESCRIBED DRUGS (at discharge)

ATC Class	TAVI Group n=228	SAVR Group n=675	p value
B01A-Antithrombotic agents (n, %)	116 (50,1%)	272 (40,3%)	0,005
A02B-Drugs for peptic ulcer and gastroesophageal reflux disease (n, %)	67 (29,4%)	227 (33,6%)	0,24
C03C-High-ceiling diuretics (n, %)	44 (19,3%)	227 (33,6%)	<0,0001
C07A-Beta blocking agents (n, %)	46 (20,2%)	190 (28,1%)	0,018



### MOST PRESCRIBED DRUGS (After 6 months)

ATC Class	TAVI Group n=228	SAVR Group n=675	p value
B01A-Antithrombotic agents (n, %)	152 (66,7%)	467 (69,2%)	0,48
A02B-Drugs for peptic ulcer and gastroesophageal reflux disease (n, %)	128 (56,1%)	419 (62,1%)	0,11
C03C-High-ceiling diuretics (n, %)	107 (46,9%)	425 (62,1%)	<0,0001
C07A-Beta blocking agents (n, %)	89 (39%)	379 (56,1%)	<0,0001

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C07A-Beta blocking agents (n, %)	89 (39%)	379 (56,1%)	<0,0001

## CONCLUSIONS:

This first analysis found that Polypharmacy was common in over one-third of our subjects at discharge (both TAVI and SAVR group). We found no association between polypharmacy and the type of AS treatment, but we observed some difference in the drug class between the two groups. The next steps will be to investigate the presence of inappropriate drug combinations and to implement an inter-professional approach at discharge for improving polypharmacy issue.

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