



Chronic anemia is a strong predictor of long-term outcomes in patients undergoing TAVI (POL-TAVI Registry)

Wojakowski W¹, Ochała A¹, Witkowski A², Opolski G³, Banasiak W⁴, Lesiak M⁵, Grajek S⁵, Dudek D⁶, Zembala M⁷, Jagielak G⁸, Zembala M⁷, Stępińska J²

1. Medical University of Silesia, Katowice; 2. Institute of Cardiology, Warsaw; 3. Medical University of Warsaw; 4. Military Hospital, Wrocław; 5. Medical University of Poznań; 6. Jagiellonian University, Kraków; 7. Medical University of Silesia, Zabrze; 8. Medical University of Gdańsk, Poland

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INTRODUCTION

POL-TAVI is an on-going all-comer registry enrolling all TAVI procedures in Poland since 2009. Within the registry baseline clinical, imaging and procedural data as well as in-hospital, early (30 days) and long-term (6 and 12 months) outcomes are prospectively registered and reported yearly.

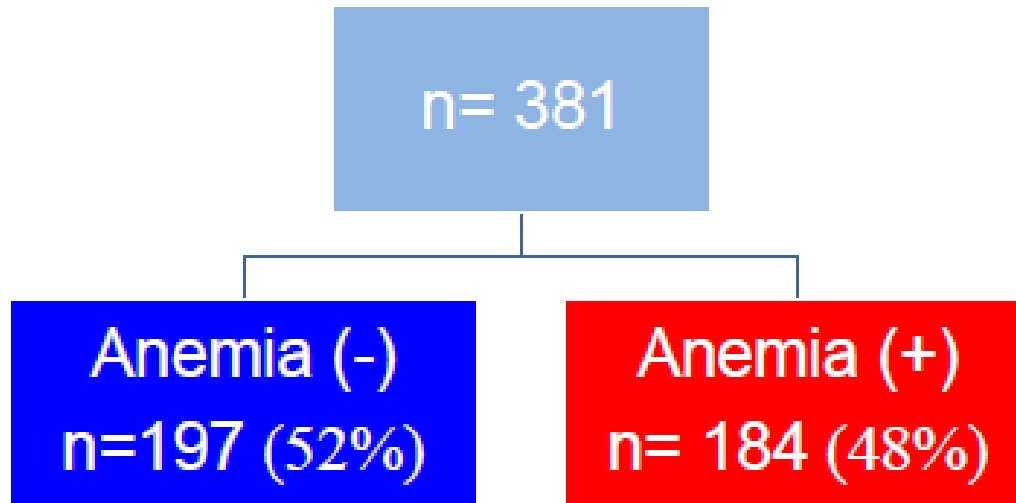
AIM

Aim of the study was to evaluate the long-term outcomes of TAVI patients presenting with anemia.

STUDY POPULATION

The registry enrolled 381 patients treated in 2013. Anemia was defined according to WHO [hemoglobin (Hb) level <13g/dL for men and <12g/dL for women].

STUDY POPULATION



DEMOGRAPHIC DATA

	Anemia (-)	Anemia (+)	p
Age, median (IQR)	80.0 (74.0 - 83.0)	81.0 (76.0 - 84.0)	0,022
Male, n(%)	78 (40.41)	87 (47.28)	0,212
BMI [kg/m ²], median (IQR)	27.2 (24.2 - 30.4)	26.4 (23.4 - 29.3)	0.067

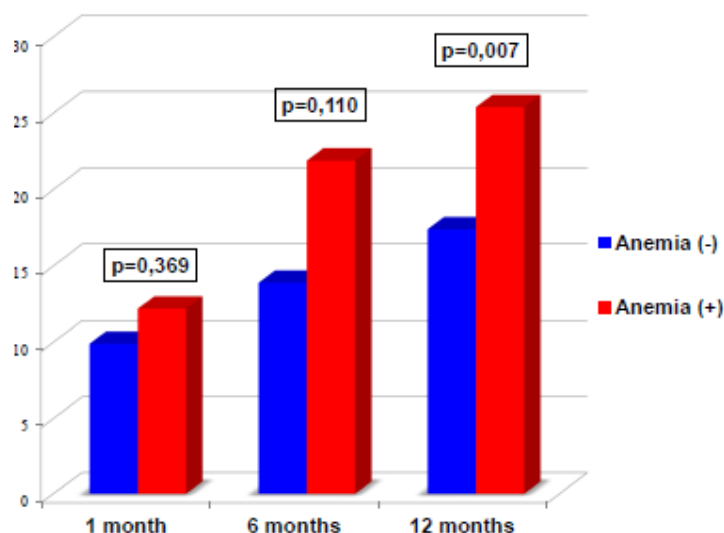
PERIPROCEDURAL DATA

	Anemia (-)	Anemia (+)	p
Blood transfusion, n (%)	52 (27.23)	90 (49.18)	<.001
Units of blood transfused, median (IQR)	2,0 (2,0 - 4,0)	2,00 (2,0 - 4,0)	0.848
Critical preoperative status, n(%)	3 (1.55)	5 (2.72)	0.493
Acute kidney injury, n (%)	18 (9.33)	27 (14.67)	0.115
Procedure time [min], median (IQR)	134.0 (105.0- 180.0)	137.5 (101.2 - 188.7)	0.746
Log Euroscore [%], median (IQR)	15.6 (9.5 - 24.0)	17.2 (10.4 - 27.6)	0.163
Euroscore 2 [%], median (IQR)	3.9 (2.3 - 6.9)	4.9 (3.0 - 7.4)	0.039

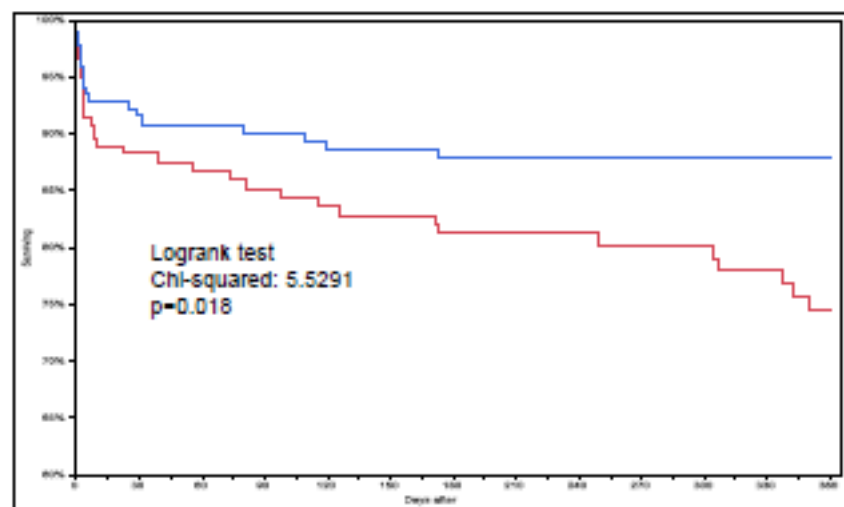
STATUS ON ADMISSION

Dialysis, n (%)	3 (1.60)	5 (2.75)	0.496
Creatinine >200umol/L, n (%)	7 (3.63)	20 (10.87)	0.008
GFR [mL/min], median (IQR)	59.44 (48.08 - 70.00)	48.00 (37.10 - 60.00)	<0.001
NYHA class, n (%)			
I	0 (0.00)	2 (1.09)	0.523
II	38 (19.69)	37 (20.11)	
III	135 (69.95)	125 (67.93)	
IV	19 (9.84)	20 (10.87)	
Angina, n (%)	87 (45.79)	99 (54.70)	0.096
CCS class, n (%)			
I	19 (21.84)	15 (15.15)	0.671
II	47 (54.02)	52 (52.53)	
III	19 (21.84)	28 (28.28)	
IV	1 (1.15)	2 (2.02)	
Walking ability, n (%)			
No problems	23 (22.12)	21 (18.26)	0.720
Some problems	73 (70.19)	83 (72.17)	
Unable	8 (7.69)	11 (9.57)	
Self-care, n (%)			
No problems	29 (27.88)	26 (22.61)	0.614
Some problems with washing and dressing	65 (62.50)	79 (68.70)	
Unable to wash and dress	10 (9.62)	10 (8.70)	
Ordinary activities, n (%)			
No problems	22 (21.15)	17 (14.78)	0.395
Some problems	57 (54.81)	72 (62.61)	
Unable	25 (24.04)	26 (22.61)	
Pain/Discomfort, n (%)			
No pain/discomfort	9 (8.65)	11 (9.57)	0.663
Moderate pain/discomfort	80 (76.92)	92 (80.00)	
Severe pain/discomfort	15 (14.42)	12 (10.43)	
Anxiety/Depression, n (%)			
No anxiety/depression	33 (31.73)	36 (31.30)	0.535
Moderate anxiety/depression	63 (60.58)	65 (56.52)	
Severe anxiety/depression	8 (7.69)	14 (12.17)	

DEATH



Kaplan-Meier analysis of mortality



Logistic regression: Death at 1 month follow up

Variable	OR per	OR (95% CI)	p-value
Hemoglobin ≥ 9 g/dL	Y/N	0.23 (0.02;5.06)	0.286
Hemoglobin ≥ 10 g/dL	Y/N	0.69 (0.22;3.07)	0.585
Hemoglobin ≥ 11 g/dL	Y/N	0.58 (0.27;1.34)	0.194
WHO anemia	Y/N	1.42 (0.69;2.97)	0.338
Blood transfusion	Y/N	4.03 (1.90;9.17)	<0.001
Hemoglobin [g/dL]	1	0.84 (0.67;1.04)	0.114
Hemoglobin [g/dL] - lowest during hospitalization	1	0.69 (0.53;0.89)	0.003
Delta Hemoglobin [g/dL]	1	1.21 (0.96;1.52)	0.110

Logistic regression: Death at 12 months follow up

Variable	OR per	OR (95% CI)	p-value
Hemoglobin ≥ 9 g/dL	Y/N	0.00 (0.0;0.00)	0.097
Hemoglobin ≥ 10 g/dL	Y/N	0.32 (0.09;1.20)	0.089
Hemoglobin ≥ 11 g/dL	Y/N	0.49 (0.24;1.04)	0.063
WHO anemia	Y/N	2.47 (1.32;4.77)	0.004
Blood transfusion	Y/N	3.23 (1.70;6.32)	<0.001
Hemoglobin [g/dL]	1	0.77 (0.63;0.95)	0.011
Hemoglobin [g/dL] - lowest during hospitalization	1	0.82 (0.67;0.99)	0.038
Delta Hemoglobin [g/dL]	1	1.00 (0.81;1.23)	0.994

CONCLUSION

Chronic anemia is present in almost 48% of patients undergoing TAVI and associated with 2,5-fold higher mortality in 12 months follow-up. Significant drop in hemoglobin levels and need of blood transfusion also significantly increase the short and long term mortality.

wwojakowski@sum.edu.pl

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