Intra-aortic balloon pump in elderly patients When over 70, does age matter?

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Introduction: Since the publication of the IABP-SHOCK II trial[1] in 2012, intra-aortic balloon pump (IABP) for cardiogenic shock use was restricted to selected patients. Sub-analysis from the IABP-SHOCK II trial identified older age as an independent mortality predictor.

Aim & Methods:

Submitted to IABP implantation

To identify if increasing age has a prognostic impact

Monocentric retrospective longitudinal trial;
Patients admitted between 2012 and 2016;

Binary-logistic regression model with all significant data to determine mortality predictors

Demographic, clinical and laboratorial data, past medical history and coronary anatomy information were included. Left ventricular ejection function (LVEF), evaluated in less then 24 hours after admission, was registered. Main outcome was the occurrence of death during 1 year follow-up.

Results:

Global population: 119 patients

Female gender: 50.4% (n=60)
Mean age: 76.9 ± 5.1 years
Acute coronary syndrome: 94,1% (n=113)
Total ballon time < 3 dias: 70,6% (n=83)
Total admission time: 10,5 ± 3,0 days
Vascular complications: 15.9% (n=19)

Mortality → N = 67 (56.3%)

All during index event

	Death (n=67)	No death (n=52)	P-value
Age (years)	77.9±5.2	75.5±4.7	**0.008**
Age ≥ 80 years old (n, %)	9 (13,4)	18 (34,6)	0.068
Hypertension (n, %)	52 (78,8)	40 (76,9)	0,826
Diabetes *mellitus* (n, %)	29 (43,9)	20 (38,5)	0,577
Dyslipidemia (n, %)	45(68,2)	33 (63,5)	0,696
Previous stroke (n, %)	7 (10,4)	2 (3,8)	0,296
Smokers (n, %)	5 (7,6)	8 (15,4)	0,239
Admission time (days)	6,5±19,6	15,7±18,4	**0.002**
Creatinine clearance (mL/min/1.73m2)	36.6±3.5	56.0 ±3.9	**0.003**
Body mass index (kg/cm2)	27.5 ±3,6	29.5 ±2,4	0.358
LVEF < 30% (n, %)	55 (82,4)	9 (17,6)	**<0.001**

After multivariate analysis

LVEF<30 % (OR=16.0, 95CI 12.2-21.1, p=0.035) was the only independent mortality predictor.

Conclusion: In this population of patients over 70 years old with IABP implantation due to cardiogenic shock, LVEF was the only independent mortality predictor. This demonstrates that in patients already over 70 years old, older age does not predict worse outcomes, and the main focus for prognosis stratification should be to evaluate LVEF.

The authors have no conflict of interests to declare

(1) - Thiele, H., et al. (2012). "Intraaortic Balloon Support for Myocardial Infarction with Cardiogenic Shock." New England Journal of Medicine **367(14): 1287-1296.**