Resuscitation of nonagenarians suffering from out-of-hospital cardiac arrest is not always futile.

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Background: Out-of-hospital cardiac arrest (OHCA) is one of the leading causes of death and there are some factors associated with poor prognosis: e.g. unwitnessed arrest, an initial non-shockable rhythm or the absence of bystander CPR. Although age is not considered an essential OHCA prognostic factor, in the daily clinical practice of medical emergency teams (METs), older age might negatively affect OHCA care.

Purpose: We aimed to investigate the outcome after OHCA of nonagenarians.

Methods: We identified all victims of OHCA who were admitted to our hospital between January 1st 2008 and December 31th 2017 by analysis of our central admission register. Patient`s data were collected from the patient's health records and anonymously stored on a central database.

Results: Altogether, there were 409 victims of OHCA admitted to our hospital between January 1st 2008 and December 31th 2017, hereunder 16 nonagenarians (3.9%). These nonagenarians were 5 men (31.3%) and 11 women (68.8%) with a mean age of 91.8 ± 2.0 years. Eight OHCA events (50.0%) were witnessed, eight victims of OHCA (50.0%) received bystander resuscitation, one victim of OHCA (6.3%) presented with an initial shockable rhythm. 11 victims of OHCA (68.8%) achieved return of spontaneous circulation (ROSC) before hospital admission and one nonagenarian victim of OHCA (6.3%) survived until hospital discharge. All data are summarized in table 1.

The nonagenarian victim of OHCA who survived until hospital discharge was a 90 year old woman who lived in a nursing home. The collapse occurred just after the METs arrival, the first documented rhythm was bradycardia. ROSC could be achieved following 10 minutes of cardio compression, 4 mg epinephrine and endotracheal intubation. 14 days after hospital admission, the patient could be returned in the nursing home with an acceptable neurological outcome (Cerebral Performance Category (CPC) 2).

Table 1: Characteristics of all nonagenarian victims of OHCA admitted to our hospital between January 1st 2008 and December 31th 2017

	nonagenarian victims of OHCA (n =16)
male	5 (31.3%)
age (years) [range]	91.8 ± 2.0 [90 -97]
witnessed arrest	8 (50.0%)
bystander resuscitation	8 (50.0%)
initial shockable rhythm	1 (6.3%)
ROSC before hospital admission	11 (68.8%)
survival until hospital discharge	1 (6.3%)

Conclusion: There are two main findings in this study. First, METs are frequently confronted with the resuscitation of nonagenarian victims of OHCA. Second, survival rates after resuscitation of nonagenarian victims of OHCA are poor, but resuscitation of nonagenarian victims of OHCA is not always futile.

Conflict of interest: None