Is traumatic cardiac arrest victims' prognosis different from their medical counterparts' one? A national study on matched populations.

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Introduction:

Traumatic cardiac arrests (TCA) resuscitation utility is often questioned. However, this question should only exist if there is a significant difference in terms of prognosis between TCA victims and their medical counterparts. No study carried out on comparable population could clarify this issue. This study objective is to compare immediate and 30 days survival between TCA and medical cardiac arrests (MCA) victims on comparable populations.

Materials and methods:

National multicentre study based on the French national cardiac arrest registry. We compared firstly the two cohorts in terms of demography, care and outcome. Next, we compared their respective outcome on propensity model matched populations.

Results:

TCA population was younger and more masculine. These CA also occurred more often out of home but were less often cared by witnesses, first aid providers and mobile medical teams.

At hospital admission as well as 30 days after CA, survival was lower (respectively 14% vs 20%; $p<0.001$ and 2% vs 6%; $p<0.001$).

After matching these differences were even more important with 14% vs 29% survival at hospital admission ($p<0.001$) and 2% vs 9% at 30 days ($p<0.001$).

	TCA	MCA	p	Odds-ratio
Survival at D0: Before matching; n(%)	449 (14.0)	8,341 (20.4)	<0.001	0.456 [0.353;0.558]
Survival at D30: Before matching; n(%)	49 (1.5)	2,415 (5.9)	<0.001	0.240 [0.186;0.329]
Survival at D0: After matching; n(%)	348 (14.2)	718 (29.3)	<0.001	0.416 [0.359;0.482]
Survival at D30: After matching; n(%)	39 (1.6)	220 (9.0)	<0.001	0.168 [0.117;0.241]

2,2x less chances to survive

4,2x less chances to survive

2,4x less chances to survive

5,9x less chances to survive

Conclusion:

We observed weaknesses in the chain of survival of TCA also described in the literature. Furthermore, lower survival chances and a widened gap after propensity score matching contradicted a part of the bibliographical corpus. Hence, the question raised by American experts is indeed legit. However, survival is not anecdotic and prehospital resuscitation seems pertinent if adapted.