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How to decide to implant an ICD in out-of-hospital cardiac arrest survivors with bad neurological outcome. CPC is an option?

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Background: According to the European Society of Cardiology guidelines secondary prevention ICD implantation is a class I indication only for those patients with an estimated survival > 1 year with a good functional status. However, it is not specified how to assess the functional status and its evaluation could be quite difficult in the case of Out-of-Hospital Cardiac Arrest (OHCA) survivors. Cerebral Performance Category (CPC) scale is the most widespread scale to define the neurological and functional outcome, but it is not known if it can be used to guide ICD implantation.

Purpose: To evaluate whether the presence of a bad neurological outcome (CPC > 2) in OHCA survivors at discharged could be used as a prognostic index in order to evaluate the implantation of an ICD.

Methods: We considered all the patients enrolled in the Cardiac Arrest Registry of our Province (550000 inhabitants in northern Italy) from the 1 October 2014 to the 31 January 2018 presenting a CPC > 2 at discharge. We evaluated the survival and the neurological status variation at 1-year.

Results: In the study period CPR was attempted in 1565 confirmed OHCA (60.2% males, 73.4±15.8 years). Of these, 119 (7.6%) were discharged

and 26 of them (21.8%) showed a CPC more than 2 (13 CPC = 3, 11 CPC = 4 and 2 CPC A). 1-year survival of CPC > 2 patients was significantly lower than those with a CPC ≤ 2 (46.1% vs 92.5% p < 0.001). Only 12/26 patients discharged with a CPC > 2 survived at 1 year; a good cerebral performance (CPC 1) was recovered in 2 of them, whilst a moderate cerebral disability (CPC 2) was present in 1 of them. A severe cerebral disability (CPC 3 or 4) persisted in the other 9 patients. The neurological prognosis of patients based on CPC at hospital discharge is presented in Figure 1.

Conclusions: Our results highlight that 1-year survival is quite low in patients with a CPC > 2 at discharge and an improvement in cerebral performance occur in a minority of them. The prognosis of the patients was very variable and unpredictable for all the CPC scale values at hospital discharge. This evidence suggest that an ICD implantation should carefully evaluated in this kind of patients and a clinical and neurological re-evaluation can be reasonable some time after the event to decide if implant an ICD.

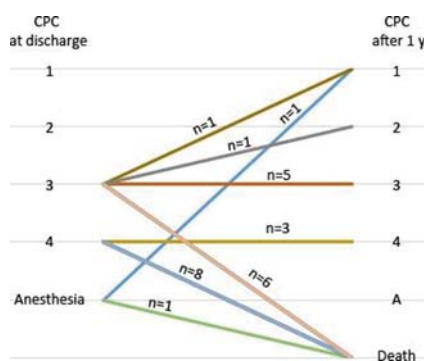


Figure 1