

Category : **Cardiovascular: cardiac arrest\CPR**

**A189 - Early recognition of clinical deterioration - the key in preventing in-hospital cardiac arrest and impact on mortality**

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**Introduction:**

The annual incidence of in-hospital cardiac arrest (ihCA) in Europe ranges between 1.5-2.8/1000 admissions and is associated with high mortality. Up to 80% of ihCA are preceded by easily identifiable signs of clinical deterioration. A Rapid Response Team (RRT) may help to minimize in-hospital morbidity and mortality. However, the RRT activation is delayed or even not activated in 30-78% of patients who might benefit. A *Modified Early Warning Score* (MEWS) may allow the early detection of these patients with a high mortality risk, prevent ihCA and allow prompt admission to the ICU.

**Methods:**

Retrospective, observational, single centre study. Data were collected from the RRT activation registries and hospital clinical database. We included all adult RRT activations between January 2018 and December 2020. Clinical signs during the 24h before the index activation were collected for patients with ihCA.

**Results:**

During the study period there were 144 RRT adult activations, including 54 ihCA. Of these, 9 were excluded due to incomplete data.

The 45 ihCA remaining patients were old (mean age 75±15 years) and 28 (62%) were male. Patients with a RRT activation for another cause were younger (63±22 years), and 37 (41%) were male, p<0.001.

The MEWS score was elevated 24h before ihCA patients in 67% of patients. In 14 patients (31%) there were criteria for the activation of the RRT (MEWS≥4).

The most common initial rhythm was asystole (91%); the median time of the cardiopulmonary resuscitation attempt was 18 minutes [10-25] but only 7% of patients had return of spontaneous circulation. The ihCA hospital mortality was 93%. On opposite, the other RRT activations, without ihCA, had a mortality rate of only 8% (table 1).

**Conclusion:**

During the study period ihCA had a very high mortality rate. Early recognition of signs of clinical deterioration (using the MEWS score) and prompt activation of a RRT may help to prevent ihCA and decrease mortality.

**Table:**

|                                | ihCA activations | Non ihCA activations |
|--------------------------------|------------------|----------------------|
| Male (%)                       | 62               | 41                   |
| Age (mean; standard deviation) | 75±15            | 63±22                |
| Hospital mortality (%)         | 93               | 8                    |

*Camparison between patients of ihCA and non ihCA activations.*