**Risk factors for out-of-hospital cardiac arrest**

**in the acute phase STEMI. The e-MUST registry**

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| **Rationale.** Out-of-hospital cardiac arrest (OHCA) high risk patients identification in the early phase of STEMI is a challenge and has strong implications for their prognosis. Predictors of OHCA in this setting have been studied sparingly. **Methods.** The e-MUST registry includes all out-of-hospital STEMI, attended by a mobile intensive care unit, in the great Paris area (France). From January 2002 to December 2008, 11744 consecutive patients were included and clinical characteristics and therapeutic strategies were collected. Two thirds of the cohort was randomly selected to identify independent predictors of OHCA and to build a risk score using logistic regression (derivation sample). This score was validated in the remaining third (validation sample) where calibration and discrimination were evaluated using Hosmer-Lemeshow goodness-of-fit test and the area under the receiving operative curve respectively. **Results.** The cohort included 11744 patients, with median age 60 yrs (range 19 - 105), 77.5% males and 751 OHCA. Independent predictors (table 1) were used to build the risk score. In the validation sample, discrimination was fairly good (AUC =0.70 [0.66-0.73]), and calibration adequate (p=0.22). **Conclusion.** In the acute phase STEMI, younger age, heart failure, infarction in the anterior section and shorter delay between chest pain onset and fisrt medical contact are independent predictors of OHCA. These routinely collected variables may help identifying patients at increasing risk of OHCA.  |
| **Table 1**  |
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| Variables  | n  | OHCA  | OR  | 95% CI  | Score |
| Age  | > 60 yrs  | 1829  | 206  | 1  |  | 0 |
| 50-60 yrs  | 2015  | 152  | 1.4  | [1.3 - 2]  | 3 |
| < 50 yrs  | 3690  | 154  | 1.6  | [1.1 - 1.8]  | 5 |
| Infarct location  | Inferior  | 3757  | 86  | 1  |  | 0 |
| Anterior  | 3394  | 279  | 1.7  | [1.4 - 2.1]  | 5 |
| Unknown  | 383  | 30  | 3.5  | [2.5 - 4.9]  | 12 |
| Heart failure  |  | 387  | 84  | 4.7  | [3.5 - 6.2] | 15 |
| Delay from pain onset to first medical contact  | > 3 h  | 1810  | 66  | 1  |  | 0 |
| 1 h – 3 h  | 2050  | 98  | 1,4  | [1 - 1.9]  | 3 |
| ½ h – 1 h  | 1468  | 107  | 2.3  | [1,6 - 3,1]  | 8 |
| < ½ h  | 2206  | 238  | 3.3  | [1,4 - 4,4]  | 12 |

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