Abstract: 
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5 years of targeted temperature management after cardiac arrest in a middle income european union country - epidemiological data and treatment results

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Introduction
Polish Therapeutic Hypothermia Registry (PTHR) was established to collect data about patients (pts) treated with targeted temperature management (TTM) after cardiac arrest (CA).

Purpose
5 years after inauguration of the Registry we present pts’ epidemiological data, treatment results and methods as well as comparison of several factors that could influence therapy outcomes.

Methods
PTHR is a national, prospective, observational registry. 29 hospitals participated in the project and submitted data about pts treated between 2010 and 2017 into online database. Statistical analysis of data was performed.

Results
456 pts were included in the Registry. 20.5% were female and 78.5% male. Mean age was 60 (20 – 88) years. 45.8% had hypertension, 17.8% diabetes, 6.4% chronic kidney disease. 23% had previous myocardial infarction (MI). In 81.8% of our pts CA happened in a presence of a witness. Only in 242 (53.1%) of overall cases a witness started CPR. In 40.1% pts medical personnel initiated CPR. First detected rhythm in 68.1% (325 pts) was ventricular fibrillation. CA predominantly occurred at place of residence (47.6%) and in the streets or other public places (29.4%). The most frequent cause of CA was MI (67.8%): STEMI in 43.0% cases, NSTEMI in 24.8%. 56.6% pts undergo PCI and 37 pts (8.1%) received intraaortic balloon pump. Pts were treated with different hypothermia methods including cases intravascular techniques (24.3%), traditional methods with the use of ice-cold gastric lavage or uncontrolled surface cooling (31.1%) and temperature controlled surface cooling (40.4%). The most common complications during hypothermia were shock (16.4%), arrhythmia (16.2%) and pneumonia (7.5%). 137 (30.0%) pts died during hospitalization. 70 (15.3%) suffered from significant disability described as 4-5 scores in Modified Rankin Scale (MRS). No statistically significant differences were found in mortality (OR 1.45 (CI 95% 0.962 – 2.197), P=0.094,) and poor neurological outcomes (MRS > 3 scores) (OR 1.39 (CI 95%, 0.95 – 2.06), P=0.11) in pts treated after 2015.
Comparison to pts treated before 2015. No discrepancies were observed between intravascular and traditional techniques in case of deaths (OR = 0.78 (CI 95% 0.48 – 1.27), P=0.32) and poor neurological outcomes (OR = 0.89 (CI 95% 0.56 – 1.39), P = 0.6). Outcomes were also similar in pts treated with temperature controlled and uncontrolled surface methods (OR 1.08 (CI 95% 0.68 – 1.72), P = 0.75).

Conclusions
PTHR gives a good epidemiologic overview of pts treated with TTM after CA in a middle income European Union country. Mortality and poor neurological outcomes remain high and were not influenced by the treatment techniques, number of pts treated in center and did not change since the beginning of the Registry.