TMS JOURNAL CLUB

The importance of bystander resuscitation in the decision to use hypothermia

Hypothermic versus Normothermic Temperature Control after Cardiac Arrest

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Background

The evidence for temperature control for comatose survivors of cardiac arrest is still not clear after TTM1 and TTM2. There is ongoing discussion about whether the effect of hypothermia differs depending on the cardiac arrest circumstances or the characteristics of each patient.

Methods

The meta-analyses examined 2,800 patients with an out-of-hospital cardiac arrest of a presumed cardiac or unknown cause with return of spontaneous circulation. Over 1,403 patients were assigned to 33°C and 1,397 patients were assigned to normothermia (36°C or < 37.8°C). This published meta-analyses included individual patient data from the TTM1 and TTM2 trials. The intervention was hypothermia at 33°C, while a normothermic strategy was applied to compare the results.

Results

All-cause mortality was the primary outcome, while the secondary outcomes were poor functional outcome, pneumonia, sepsis and severe bleeding. While there was no difference in the rate of mortality (49.4% hypothermia vs. 47.9% normothermia, P=0.41) or functional outcome (54.3% hypothermia vs. 54.0% normothermia, P=0.88), a post hoc analysis of patients without bystander resuscitation had lower mortality with hypothermia (Fig. 1) and significantly better functional outcome with hypothermia (Fig. 2). There were no significant differences in adverse events related to the hypothermia group.

Figure 1.

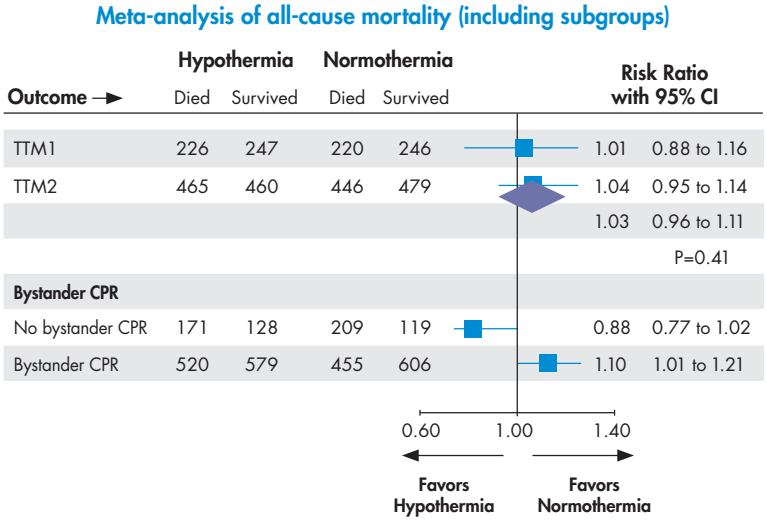
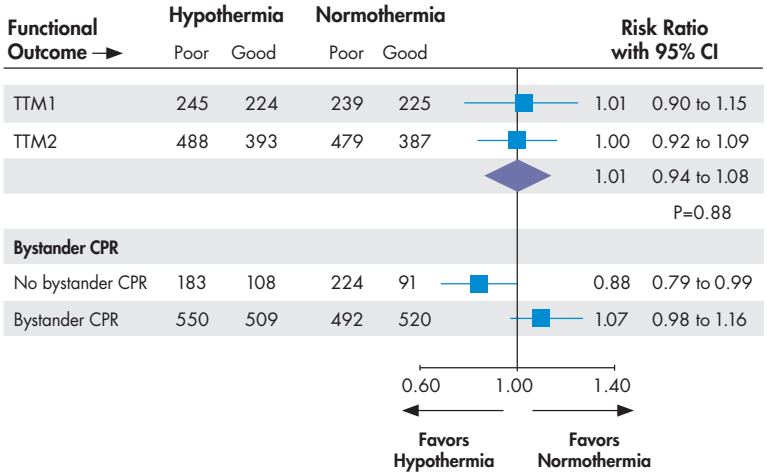


Figure 2.



Conclusion

The post hoc analysis suggested patients without bystander resuscitation had better functional outcome with hypothermia.