The Neuroprotective Effects of Therapeutic Hypothermia in Post-Cardiac Arrest Patients: A Systematic Review of the Evidence

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PATIENT CARE ISSUE

Background & Significance:
- Cardiac arrest is a leading cause of death
- About 300,000 cardiac arrests occur each year in the US
- Survival rates vary from 11-48%
- Therapeutic hypothermia (TH) is a relatively new treatment option for cardiac arrest patients

EVIDENCE-BASED PRACTICE QUESTION

Question: Does therapeutic hypothermia achieve better neurological preservation and decrease mortality in post-cardiac arrest patients compared to normothermia?

Population: Post-cardiac arrest patients who experience return of spontaneous circulation (ROSC)
Intervention: Therapeutic hypothermia
Comparison: Normothermia
Outcome: Achieve better neurological preservation and decrease mortality

REGISTERED NURSE INTERVIEW

Interviewed Liz Patrick, RN, from Milton S. Hershey Medical Center
- TH is an effective method of neurological preservation
- Cooling is done by IV fluids, blankets, and leg and torso wraps
- Hypothermic temperature maintained for: 24-48hrs
- Goal temperature range: 33-34°C
- Patient is expected to achieve full recovery in 90 days
- Earlier treatment leads to a better outcome

RESULTS

- All of the studies focused on patients with cardiac arrest caused by cardiac problems, not physical trauma
- Sample sizes: 5,1038 patients
- Target temperatures: 31-34°C
- Duration of cooling: 3-72 hours
- Cooling methods: IV, surface cooling, or combination
- 4 of the 9 articles said that more research is needed
- The other 5 articles concluded that TH is significantly beneficial
- 7 of the articles focused on out-of-hospital cardiac arrest
- 3 of the studies initiated TH in field conditions

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

- TH should be initiated as soon as possible in post-cardiac arrest patients both in-hospital and out-of-hospital

LIMITATIONS

- Inconsistency in study variables
- Convenience sampling

ACKNOWLEDGEMENTS

- Liz Patrick, RN
- D. Scott Baldwin, P

REFERENCES