Service Priorities and Programmes

Electronic Presentations

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Search for a bullet to optimize neurological outcome

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Introduction

Therapeutic hypothermia is known to improve survival and decrease mortality after two randomized controlled trials published in 2003. Implementation of an effective and rapid therapeutic hypothermia is the key to optimize neurological outcome. Total 19 post cardiac arrest victims were admitted to PMH ICU in 2013. The mean time to achieved target temperature was 8.8 hours. Recent studies suggested that the induction time below 4 hours can provided better outcome. However, there is no standardization in choosing cooling method, evidence-based project had been performed to look for effective methods and the staff awareness on the important of the rapid induction of therapeutic hypothermia.

Objectives

The aims of this project are: - To review the effectiveness on various cooling methods for therapeutic hypothermia after cardiac arrest to promote patient outcome. - To develop a protocol to facilitate staff's compliance.

Methodology

MIDLINE, EMBASE, Cochrane Library and CINAHL were searched from 2005 onwards. Comparative studies reporting the mortality, neurological outcome or any kind of complications in patient undergoing therapeutic hypothermia after cardiac arrest and published in English with full text article were included. Of 2378 studies, 8 studies were included in this review.

Result

Surface cooling and IV cooling has shown to have faster time of initiation while endovascular cooling has shown to have a faster cooling rate. However, there is no significant difference on the time to reach the target temperature. The most effective

rate is the combined use of different cooling methods. There are more arrhythmias and hypomagnesaemia for patient using endovascular cooling, while more hyperglycaemia and higher risk of overshooting in patient using surface cooling.There is no significant difference in other complications. A new protocol on the combined use of surface and IV cooling is developed. A more structured guidelines to ensure staff's compliance.