

## **THE OPTIMAL CARE FOR POST-RESUSCITATION SYNDROME**

M. Holzer

Department of Emergency Medicine, Medical University of Vienna, Vienna, Austria

In industrial countries, the incidence of out-of-hospital sudden cardiac arrest lays between 36 and 128 per 100,000 inhabitants per year. Unfortunately, full cerebral recovery after cardiac arrest is still a rare event. Full neurological recovery only occurs in 6 to 23 %. Up to now, no specific post-arrest therapy was available to improve outcome.

The main targets of optimal post-resuscitation therapy are the optimization of critical organ function, correction of metabolic disturbances, temperature control and therapeutic hypothermia.

Hemodynamic instability is common after cardiac arrest and manifests as hypotension, low cardiac output and arrhythmias. The mean arterial blood pressure should be targeted to achieve an adequate urine output, taking into consideration the patient's usual blood pressure.

There is a strong association between high blood glucose after resuscitation from cardiac arrest and poor neurological outcome. In common with all critically ill patients, patients admitted to a critical care environment after cardiac arrest should have their blood glucose monitored frequently and hyperglycaemia treated with an insulin infusion (target glucose 4.4-6.1 mmol/l).

The risk of a poor neurological outcome increases for each degree of body temperature over 37°C. Treat any hyperthermia occurring in the first 72 h after cardiac arrest with antipyretics or active cooling.

Two randomized clinical trials of mild therapeutic hypothermia after successful resuscitation from cardiac arrest showed that hypothermia after cardiac arrest improves neurological outcome as well as overall mortality. Unconscious adult patients with spontaneous circulation after cardiac arrest should be cooled to 32-34°C over 12-24 h. The introduction of therapeutic hypothermia after cardiac arrest in everyday intensive care practice could save thousands of lives worldwide, as only 6 patients have to be treated to get one additional patient with favourable neurological recovery.