Letter by Hartung and Cottrell Regarding Article, “What Is the Use of Hypothermia for Neuroprotection After Out-of-Hospital Cardiac Arrest?”

To the Editor:

Kim et al.\(^1\) wrote that “IH \[induced hypothermia\] provides neuroprotection in animal models of cardiac arrest, but is of uncertain benefit in humans.” Indeed, as Desmond Morris wrote, humans are The Naked Ape.\(^2\) Other vertebrates have fur or insulating amounts of subcutaneous fat (whales and sea lions), or feathers and down, or live in warm environments with little temperature variation (naked mole rats), or are cold blooded. Homo erectus probably had fire 400,000 years ago and H sapiens have been wearing clothes for \(\approx 170,000\) years. Those cultural adaptations seem likely to have reduced natural selection for genetic adaptation to hypothermic body temperatures and may have facilitated selection for an immune system that works exceptionally well, but only within a narrow range of body temperature. So it may be the case that humans, or at least adult humans, have lost something in exchange for artificial heat and clothing ... the ability to tolerate, let alone benefit from, IH. Although major clinical studies show conflicting results regarding the efficacy of IH (see Hassel’s review\(^3\) regarding IH after in-hospital cardiac arrest), almost all of them find higher infection rates in patients treated with IH (especially pneumonia, including a \(P=0.08\) suggestion from Nielsen et al.\(^4\)). In distinction, a mountain of studies in nonhumans, including other primates, show a protective effect of IH with no mention of subsequent infection rates.

The prevailing assumption seems to be that if hypothermia works in other mammals, we should be able to make it work in humans. However, this fundamental aspect of our physiology may be unique ... or only shared with nonhumans in whom therapeutic hypothermia has not been tested.

Do any laboratory vendors offer naked mole rats?

Disclosures

None.

John Hartung, PhD
James E. Cottrell, MD
Department of Anesthesiology
State University of New York Downstate Medical Center
Brooklyn


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John Hartung and James E. Cottrell

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