Efficacy of Radiant Heat in Burns Treatment and Post-Operative and Intensive Care

Burns Treatment

"...The conclusion to be reached is that adequate energy from external infrared heaters or the use of occlusive dressings reduces the HMR [hypermetabolic response] to burn injury to a manageable level....."

"...Infrared radiation is a practical and inexpensive way of distributing energy from the environment to the patient, suitable also in disaster situations. The ambient air temperature can be kept comfortable with respect to the patient's airways and to the nursing staff....."

"...The Thermal Ceiling™ is especially useful in rewarming the patient following surgery and has been used post-operatively in other branches of surgery....."
"...Heat loss in burns patients is an important preventable cause of morbidity and mortality....."

Post-Operative and Intensive Care

A. Sharkey, MB, BCh, BAO, FFARCS, J.M. Lipton, PhD, M.T. Murphy, MD, A.H. Giesecke, MD: Inhibition of Postanesthetic Shivering with Radiant Heat. Anesthesiology 66:249-252, 1987
"...The results of the second experiment clearly show the superiority of radiant heating over warmed blanket treatment in control of PAS. Radiant heating reduced shivering duration approximately 84% over the 30-min test period....."

"...Radiant heat from a low-temperature radiator, a Thermal Ceiling™, was established as a new efficacious method for providing heat, shortening the rewarming period and restoring body temperatures and heat....."

"...The key to making radiant heat work is to stress that only one blanket should be used over the patient....."
"...The results of this study support the use of radiant heat to treat the PS [post-operative shivering] patient, and imply that perhaps postanesthesia nurses should reconsider radiant heat as a primary treatment for PS [post-operative shivering]....."
"...Radiant heat is a nursing intervention that requires no physician order and is easy and safe to administer....."
"...This method is cost-effective nursing intervention....."

".....This treatment almost eliminated postoperative shivering, and it resulted in the lowering of oxygen uptake, carbon dioxide production, and required ventilatory volumes to stable levels where spontaneous breathing could be used safely....."


".....In my experience as a Recovery Room nurse, it is very unusual for post operative Open Heart and major Vascular patients not to require Nipride, Nitroglycerine, fluid bolluses, and pain medication during the immediate post operative period....."

".....patients experience less or no shivering and are more hemo-dynamically stable. Of interest, one patient stated it was the first time she had been warm during her entire hospital stay....."


".....The use of radiant [heat] not only prevents heat loss, but enhances heat gain. The most recent research indicates that radiant heat enhances convective heat transfer, promotes radiant heat gain, and decreases peripheral vasoconstriction. This method can be extremely beneficial for patients after cardiac surgery who initially maintain high systemic vascular resistance....."


".....We conclude that the investigated Aragona Thermal Ceiling™ seems to be an effective device for postoperative rewarming, which can reduce body [own] heat production to about 50% of control values without treatment related side effects. For patients with an equal body [own] heat production this means a cut in rewarming time by 50%....."


".....In summary, postoperative external heating with a thermal ceiling reduced oxygen consumption and shivering significantly in moderate hypothermia. Furthermore, it reduced plasma catecholamine levels. At the same time, the comfort of the patients increased considerably....."


".....The heat gain with current conventional rewarming methods, convective air warmers and hot-water mattresses, is 58-94 W. At 135-148 W the RC [Thermal Ceiling™] offers higher heat gain, faster rewarming, and, because it is a “stand-off” system, allows easy access to the patient without interrupting rewarming. Early extubation by 4 hours after admission is the ICU’s proposed management policy for ACBP patients: but, until the introduction of the RC, this was not feasible because of persistent hypothermia. The rapid rewarming rate offered by the RC, the absence of any deleterious effects, and the practical usefulness of its “stand-off” capability, makes the RC a powerful competitor to current rewarming methods in both effectiveness and, of increasing importance, cost."