Critical Care

118. Mortality in Malaria in Intensive Care

TH Trivedi, VS Dhoot, ME Yeolekar
LTM Medical College and General Hospital, Mumbai.

Background: Mortality in patients of malaria with organ dysfunction is variable and therapeutic trials comparing various anti-malarial agents have not shown consistent results.

Aims: To study clinical profile and compare outcome in critically ill patients with different organ failure. To determine if chemotherapy with Quinine + Doxycycline (Q) Vs Artesunate + Doxycycline (A) Vs Quinine + Artesunate (Q+A) produces any change in outcome.

Methods: Patients of severe falciparum malaria (positive smear for asexual form of malarial parasite) admitted in ICU over two-years period and having at least one organ failure (APACHE II criteria) were included and patients who had concomitant other acute infections (Leptospirosis, TB, hepatitis, etc) were excluded. They were randomized to receive chemotherapy with Q, A or Q+A. Their clinical profile, severity of illness (SAPS scores) organ failure and outcome were studied and results were analyzed using Chi Square test.

Results: Out of 108 patients included 77 were males and 31 females of whom 21 were pregnant. Mean age was 34.75 (12-80 years) and average duration of stay in ICU was 6 days (2-20 days). Hepatic failure was commonest (57) followed by hematological (51), respiratory (50), renal (45), cardiac (27) and cerebral (26). SAPS score varied from 4 to 20 (mean 12.89). Total mortality was 35/108 (32.7%), males (29.87%), females (38.7%), pregnant females (42.85%). Higher mortality was seen in patients with renal (57.77%, p < 0.01) and cardiac (55.55%, p < 0.05) failure compared to respiratory (42%), hepatic (35.08%), neurological (23.07%) and hematological (19.6%) failure. Mortality increased with increase in number of organ failure. Mortality was minimum in group treated with Q (20.93%) compared to A (34.78%) or Q+A (34.48%). However this difference was not statistically significant (p < 0.8) and mean SAPS score in Q group (10.6) was much lower than A group (14.97) and Q+A group (13.12). Mortality was higher in pregnant patients who were travelers (62.5%, p < 0.05).

Conclusions: Mortality in severe malaria with renal and cardiac organ failure is maximum. There is no significant change in mortality in patients treated with Quinine or Artesunate or both.

663. Effect of Tight Blood Sugar Control on Mortality in Critically Ill Patient in Medical Intensive Care Unit

R Saxena, YD Singh, J Hanumanthu, PS Tampi, MSN Murthy, R Ramsethu, NK Mahesh, M Goel, A Dutta
INHS Asvini, Mumbai 400 005.

Stress of critical illness is often accompanied by hyperglycemia, whether or not patient has a history of diabetes mellitus. This has been considered to be part of adaptive metabolic response to the stress which is mainly related to insulin resistance, insulin deficiency and over feeding, Although available evidence supports the implementation of intensive therapy in surgical ICU yet there is no study in medical ICU setup to explain the beneficial effect of this simple and cost saving intervention.

Methods: We performed an open prospective randomized controlled study involving adults, admitted to our medical intensive care unit based on a predefined TISS score. On admissions patients were randomly assigned to receive intensive insulin therapy (blood glucose maintained between 80 to 110 mg/dl) or conventional treatment of insulin infusion only if blood glucose level exceeded 215 mg/dl and to keep glucose between 180 to 200 mg/dl.

Results: At 15 months, convenience sample of 50 patients was enrolled (30 in intensive and 20 in conventional group). Intensive insulin therapy reduced overall mortality by 29% (P < 0.04 with adjustment for sequential analysis). The greatest reduction in mortality involved deaths due to multiorgan failure. Intensive insulin therapy also reduced in blood stream infection by 8%, requirement of blood transfusion by 5%, requirements of ionotropes by 20%, requirement of ventilation by 20%. It had also been observed in maximum cases that even just 48 hours of intensive insulin therapy changes the results drastically, if instituted early in all cases of hyperglycemia.

Conclusion: Intensive Insulin therapy in a heterogeneous population of critically ill patients decreases morbidity and mortality, sepsis related organ failure, transfusion requirements and polyneuropathy.

675. Failure to Mount A Febrile Response and Cytokines in Patients with Sepsis

YD Singh, RN Misra, J Hanumanthu, AI Ahluwalia, KJ Singh, PS Tampi
INHS Asvini, Mumbai 400 005.

Background: Hypothermia in sepsis patients has been reported to herald higher mortality than febrile septic patients. Inability to mount a febrile response in sepsis is not well understood. Since pro-inflammatory cytokines play a crucial role in the genesis of fever, we postulated that patients with sepsis who fail to mount a febrile response in sepsis is not well understood. Since pro-inflammatory cytokines play a crucial role in the genesis of fever, we postulated that patients with sepsis who fail to mount a febrile response would have lower circulating levels of pro-inflammatory cytokines than febrile patients.

Methods: 50 consecutive patients, who met the pre-determined criteria for Sepsis, were studied. 20 critically ill patients without sepsis from medical ICU and 20 healthy volunteers served as control. Body temperature, Interleukin-2, Interleukin-6 and Tumour Necrosis Factor-alpha concentration were measured at enrollment. The patients were divided into a Hypothermic group (temperature ≤ 35.5°C), Euthermic group (temperature > 35.5°C and < 38.3°C) and a Febrile group (≥ 38.3°C) at the core temperature at enrollment. Clinical and cytokine data were compared among these three groups of patients. In addition, the correlation between the core body temperature and cytokine levels at enrollment was determined.

Results: 09 patients (18%) were hypothermic, 32 patients (64%) were febrile and 09 patients (18%) were euthermic at enrollment. The 28-day survival of hypothermic group was significantly lower than that of the febrile group (0% vs 36%, p < 0.001). Inability to raise body temperature was independent predictor of mortality. Presence of fever signified better prognosis (p < 0.05). Hypothermic and Euthermic patients had higher
incidence of organ dysfunction at enrollment than the febrile patients. The was no significant difference in the cytokine profile among the three groups of patients. In addition, there was no correlation between the core body temperature at enrollment and the circulating levels of cytokines measured.

Conclusion: Hypothermic and Euthermic patients with Sepsis have significantly higher mortality and higher incidence of organ dysfunction than febrile sepsis patients. Inability to mount a febrile response by sepsis patients cannot be attributed to the blood levels of pro-inflammatory cytokines.

* Adjudged Best Papers and got an award of Rs. 1000/- each from Chairman Scientific Committee, Diamond APICON 2005.