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Critical illness like multiple fracture, major surgery and multiple organ system failure studied in the present study were associated with hypermetabolic response in body even though the patients were confined to bed without having any physical activity. This was evident by serial fall in serum proteins like serum albumin and transferrin occurring due to negative nitrogen balance, stating that proteins are used as energy source and wound healing. Overall the stress of illness causes release of stress hormones like epinephrine, nor-epinephrine, corticosteroids, glucagons, thyroxin which ultimately mediate the metabolic process. The glucose utilization is reduced by peripheral tissues due to insulin resistance state, which was evident by hyperglycemia and hyperinsulinemia. Thus proteins and lipids become the alternative source of energy for body tissues and catabolism of protein and lipids causes wasting and hypoprotinemia. Thus overall these patients have high energy expenditure and they need more energy input which is frequently not met with enteral or parenteral feedings due to technical difficulties and thus these patients go in for protein energy malnutrition. This malnutrition state is positively corelated with morbidity and mortality in critically ill patients in earlier studies though we could not find such correlation. All patients with multiple fracture and

major surgery recovered uneventfully even though they had hypoproteinemia. Even with better care and nutritional care and support in BAGH than SSGH serial protein fall was equal n both the hospitals. Serum albumin and serum transferrin had uniform and comparable fall over eight days period, thus non was found to be superior over other in early catabolic response. Thus it is the metabolic response of the body that governs serum protein levels rather than the nutritional support.

The vital organs like heart, kidneys, lungs etc. taken care of in intensive care unitis in critically ill patients. Here also biochemical parameters like blood urea, serum creatinine, electrolytes (Na^+,K^+ HCO_3^-, Cl^-) are very important in diagnosis and prognosis of illness. Arterial blood gas analysis gives important information regarding acid-base balance and respiratory system-the most important life supporting physiologic system of body.

Blood biochemistry is thus very important for treating doctor for diagnosis of disease, treatment, prognosis and evaluation of response of the treatment.