

Pre-Anaesthetic Evaluation of Geriatric Patients for Emergency Orthopaedic Surgery: Biopsychosocial Perspective

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Advancements in medicine, better diagnostic and therapeutic facilities and ever increasing awareness about disease states have increased the life expectancy throughout the globe with a resultant increase in geriatric population presenting for elective and emergency surgical procedures. One-fourth of all trauma victims in US are above 65 years which also does account for the 5th leading cause of mortality in this demographic age group. The higher morbidity and mortality in this age group mainly occurs due to associated co-morbidities [1-3]. Emergency geriatric orthopaedic surgery is a clinical, socio-behavioral and economic challenge in developing nations. The ratio of resource utilization is grossly affected which puts a huge burden on the health budgets and medical services.

Clinical Concerns in Elderly

The clinical concerns in aging population are of immense significance as the co-morbid diseases directly affect the emergency orthopaedic care. Endocrine changes, nutritional deficiencies, variably impaired renal and hepatic functions, diminished respiratory and gastro-intestinal tract functions, cognitive and neuro-behavioral changes, practice of polypharmacy and many other co-morbid diseases are decisive in planning the emergency orthopaedic care as these prevalent clinical entities are associated with a poor outcome. Behavior of aged body under physiologic stress can be highly unpredictable which can be a potential enhancer of morbidity and mortality. It has been conclusively proven in the literature that delayed surgery in elderly patient with hip fracture results in higher morbidity and mortality at 30 days and 1 year besides increasing the incidence of orthostatic pneumonia and thrombo-embolism. If delay is done at this stage, risk of pressure ulcers, thromboembolism and pneumonia increases manifold besides increased mortality.

Deciding Emergencies and Formulating Anaesthetic Plans

Which injury/surgery to be labeled as emergency is a big clinical and psycho-social concern? Going by the evidence of injury severity scale and the resultant disability from the injury, all such surgeries can be labeled as emergencies though the risk varies among demographic cohorts. Various clinical and socio-behavioral criteria are decisive in formulating surgical and anaesthetic plans. The responsibility of such surgeries should be shared among the specialties of orthopedics, anaesthesia and emergency medicine so as to formulate various plans of therapeutic interventions. Pre-op anaesthetic check-up is the ideal time for assessing socio-behavioral and psychological aspects. The upper cut off age to label a patient geriatric is controversial as various scoring systems and classifications use different parameters to label a patient as geriatric. As per injury severity scale (ISS), patients above 70 fall in geriatric age group whereas advanced trauma life support (ATLS) and eastern association for surgery in trauma (EAST) guidelines recommend an age of 55 and 65 years respectively to label a patient as geriatric [4,5]. For present editorial, 65 years has been taken as the cut-off age for geriatric population as it is the most commonly used age throughout the globe.

Socio-behavioral and Biopsychosocial Perspectives

Much significance is given to the clinical status of the patient

in present day anaesthesiology practice. However, pre-operative functional state, socio-behavioral status, biopsychological perspectives and social support network are equally important aspects in geriatric patients which can prove decisive in surgical outcome [6]. Neuro-behavioral, cognitive and social support is extremely important for rehabilitation [7].

Engel, the pioneer proposer of the biopsychological model 30 years ago, has beautifully described the utility of this model in depth understanding of various critical aspects of health and disease. Engel in a radical departure from the then (and still!) prevalent biomedical model, proposed that psychological and social aspects of health be given equal importance while assessing the cause and management of disease [8].

Psychological and social aspects of health and disease have not received adequate importance in the elderly due to clinical dominance of evidence based symptomatology [8]. Geriatric patients' need a more humanistic, holistic and multidimensional approach rather than just being treated for clinical symptoms. The biopsychosocial model advocates the delivery of highest quality of care not only to geriatric but to all categories of patients without compromising any deficiency in clinical intervention [9,10]. Pain medicine is fast emerging a new subspecialty of anaesthesia and this model can be utilized to a large extent in this field as well. Pain perception is a great psychologic determinant of outcome in elderly orthopaedic trauma patients. The distressing symptomatology of pain is an ideal base to exploit the usefulness of biopsychosocial perspectives of this model to alleviate the psychological and social concerns associated with clinical symptomatology of pain [11].

The challenges for orthopaedician and anaesthesiologist increase further as elderly geriatric patients demonstrates a highly variable demographic characteristics and presents a different degree of biological, psychological and social morbidity concerns which can significantly impact surgical outcome. The stress caused by orthopaedic injury is multifactorial as the quality of life is severely disturbed besides loss of functional independence and variable degree of excruciating pain. Literary evidence in anaesthesiology practice is also limited as far as use of this model is concerned. This model if practiced in entirety elevates the stature of the patient rather than just being considered as a mere biological being from psychological and social point of view. Introduction and greater use of this model into clinical curriculum

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Received November 24, 2013; Accepted November 25, 2013; Published November 27, 2013

Citation: Bajwa SJS (2013) Pre-Anaesthetic Evaluation of Geriatric Patients for Emergency Orthopaedic Surgery: Biopsychosocial Perspective. J Pain Relief 2: e117. doi:10.4172/2167-0846.1000e117

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during post-graduation courses can not only help in the improvement of communication and interaction skills of young anaesthesiologists but will definitely change their clinical attitude, coping with stressful situations and various other soft skills especially needed during treatment of geriatric population. This model was used in the past for certain surgeries previously but the entire awareness of its clinical utility was not known to the practicing anaesthesiologists. Similar situations can also be encountered while administering anaesthesia to paediatric population where this model has to be used in a slightly different manner depending upon the age and psyche of the paediatric patient. Patient sensitive, patient oriented and patient centered approaches are the central thematic issues of adopting this approach [12].

The practicing of this model can have direct impact on various biological parameters during administration of anaesthesia. Directly or indirectly, this can be potentially useful in modifying the various responses during peri-operative period including response to anaesthetics and stress during laryngoscopy and intubation. The anxiety related to regional anaesthesia can also be overcome with adoption of such psychologic measures besides improving the recovery characteristics. Overall this allows a faster recovery and early wound healing [13-16].

Making a good rapport with the patient before surgery can possibly improve therapeutic outcomes if policies of this model are well understood and judiciously executed. During pre-op examination, various measures, based on bio-psychosocial model, can be taught to the patients and their family members who can be helpful during peri-op period. Music therapy, sharing some selected lighter moments, relaxation therapy, yoga, cognitive behavioral therapy, and empathic listening and conversation therapy can go a long way in preparing the patient for surgery and post-op rehabilitation [13-16].

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