Geriatric Critical Care in India

Sir,

I read with great interest the article by Sodhi *et al*. and the accompanying editorial published in the latest issue of your journal.[1,2] I was surprised to note that there was no reference to our research article in either of these, considering that it is the first (and only) prospective long-term data of elderly patients in Indian Intensive Care Units (ICUs).[3]

India being a developing country is unique in its socioeconomic diversity and health delivery systems. We understand routine predictors such as APACHE II scores and treatment modalities are important for evaluating outcomes of critical illness in geriatric patients. However, an outcome analysis would be incomplete without an assessment of the baseline characteristics of the patients like economic, nutritional, and educational status. This gives a true estimate of the long-term outcome in geriatric patients after discharge from an ICU. Further, this information proves vital to pinpoint predictors for planning treatment and counselling families. It may also be worthwhile to look independently at the outcomes of the very old patients (>75 years) when considering resource allocation or prognostication.

In our prospective study of 109 (215 screened) elderly patients (>65 years age), overall mortality at discharge from ICU was 12% which increased to 30% and 47% at 1 and 12 month (s) respectively. Similar to the findings of Sacanella *et al*., when the cohort was divided into younger old (>65–74 years) and the very old (>75 years), the latter had significantly higher rates of mechanical ventilation and worse premorbid functional status than the young old ($P < 0.05$).[4] The mortality at discharge of these two groups (>65 years - 6.2%; >75 years - 20.5%) was significantly different ($P = 0.02$); at 28 days and 12 months, however, this difference lessened. On a univariate analysis, the predictive factors of short-term (28 day) mortality were APACHE II score, length of ICU stay, nutrition status, and premorbid functional status. The predictive factors of long-term mortality were age, APACHE II score, and length of ICU stay, nutrition status, premorbid functional status, and presence of delirium at admission or during ICU stay. On a multivariate analysis, the factors associated with short-term mortality were the APACHE II score $P = 0.02$; odds ratio (OR) 1.1 (1.0–1.2) and premorbid functional status $P = 0.03$; OR 0.2 (0.1–0.8). Long-term mortality, on multivariate analysis showed association with APACHE II score $P = 0.000$; OR 1.2 (1.1–1.4), high risk of malnutrition on admission by malnutrition universal screening tool (MUST) screening $P = 0.01$; OR 0.01 (0.01–0.60) and presence of delirium $P = 0.03$; OR 0.32 (0.04–1.5). A Kaplan Meier survival analysis at 12 months showed a significant survival association with the grades of MUST score (log Rank test $P = 0.012$). Overall, 75% of survivors had a good functional outcome (ability to perform 4 out of 6 activities of daily

life independently), and 62% were fully independent at 1-year. There was no significant difference in the functional outcomes among the two age groups ($P = 0.13$). Socioeconomic status (determined by a classification system incorporating both education and earning) did not affect long-term or short-term outcome in our patients.

While we appreciate the work of Sodhi *et al*. in reporting retrospective data from their ICU it would have been interesting if the authors had collated information from this series (having been published earlier this year, it is possible the authors were not aware of it during the submission of their manuscript). Several interesting observations come to the fore with both studies. First, the similarity in the mean age 74.7 (±8.4) years and APACHE II scores (19.2 (±6.5) for our patients. Second, the shorter length of stay of our patients 7.1 (±3.3) versus 11.4 (±17.4) days. Third, the difference in mortality at discharge 11% in our cohort versus 20%. Fourth, the predominance of neurosciences patients (42%) in their cohort and finally, the issue of end of life orders (EOL) and leaving against medical advice. As Sodhi *et al*. correctly point out, treatment limitations differ according to age (and treatment costs in the particular ICU). This may explain why the mortality at discharge is lesser in our cohort than when all patients are followed-up for 28 days or longer - 15 of 109 of our patients had EOL orders in place, and 8 of these left against advice. More than two-third of the deaths after discharge in our cohort occurred within 3 months. This distribution was equal for both younger olds and the very olds, and has been seen in earlier studies.[4]

Both our studies similar to others[5,6] conclude that age per say does not affect the outcome. In both, men were admitted more frequently than women. This has been observed in previous studies[7] and may be a result of gender preferences.

The comment in the editorial is apt and may goad others to look at the geriatric critically ill patient, and their outcome which would be appropriate for repercussions on the medical resource allocation. The effect of nutritional status and quality-of-life after discharge may be unique to the Indian subcontinent and would merit further research with well-validated quality-of-life tools.

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DOI: 10.4103/0972-5229.152788