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Measuring Quality of Life

Patients developing critical illness have been associated with substantial attributable mortality rates. However, it may drastically impact quality of life (QOL) as well. Therefore, intensivists should also be concerned with health status and functioning after discharge of the critical care department. In this overview, the impact of critical illness on QOL, and potential ways to measure QOL before and after critical illness will be shortly highlighted.

Quality of Life and Critical Illness

Modern critical care medicine offers a wide spectrum of high-tech and innovative possibly life-saving and prolonging treatment modalities. Since caring for patients with critical illness is primarily targeted on survival, it is mainly assessed by physiologic surrogates of failure or success and predominantly measured by means of mortality (respectively ICU, 28-day, in-hospital, or 6-month mortality), which are, as primary endpoint under study, relatively easy to assess (Graf et al. 2003). However, for all healthcare providers involved in patient care, and for both the patient and his relatives as well, this may not be the only endpoint of interest. Over years, patients' QOL following critical illness has gained importance besides outcome in terms of survival. For instance, some interventions can maintain life in the protected critical care environment, but the resultant health state may be valued as worse compared to death (Gill et al. 1994; Graf et al. 2003; Patrick et al. 1994). Consequently, intensivists should not only be concerned by simply prolonging patients lives, but should be concerned about their health status perspective as well (Vandijck et al. 2008).

How to Assess Qol

Assessing patients' individual QOL is a complex and often difficult task as the process encompasses health status, but also other related determinants such as employment status, social relationships, the wellbeing of relatives and other proxies, or financial aspects (Testa et al. 1996). As such, a considerable range of possible instruments) have been proposed to assess patients' outcome other than survival (Hayes et al. 2000; Rubenfeld 2007):

- spirometry (physiologic measures);
- six-minute walk (functional measures);
- St. George's Respiratory Questionnaire;
- Sickness Impact Profile (disease specific measures);
- Center for Epidemiologic Studies Depression Scale (symptom inventories);
- Medical Outcome Survey Short-Form 36 (SF-36), and
- EuroQol-5 and -6 dimensions survey (generic health related quality of life instruments)

A discussion of the advantages and disadvantages of selecting from this battery are beyond the scope of this article, but researchers are discouraged to use self-developed tools unless they are being evaluated alongside accepted measures.

After international and interdisciplinary consensus, the SF-36 is, besides its restraints, the most extensively validated, and therefore, one of the most accepted instruments and has been recommended as a global measurement of health status and for appraising non-mortality outcome in general (Neugebauer et al. 2002). This survey contains 36 questions that evaluate respectively eight health domains considered to be important to patient well-being and health status, concepts that reflect physical health, mental health, and the impact of health on daily functioning (Ware et al. 1992). In brief, the eight multiple- item domains encompass physical- and social functioning, role limitations caused by physical- and emotional problems, mental health, energy and vitality, pain, and finally the individuals' general perception of health. For each variable item, scores are coded, summed, and transformed on to a scale from 0 to 100 (i.e. from worst to best possible health state). Additionally, scores can be combined to summary measures representing a physical health (including physical functioning, physical role, pain, and general health) and a mental health summary scale (including vitality, social functioning, emotional role, and mental health) (Graf et al. 2003; Ware et al. 1992). Finally, all SF-36 profiles can be transformed to a so called, preference score from 0 to 1, based on which quality adjusted life years can be calculated (Brazier et al. 2002; Vandijck et al. 2007).

Qol Before and after Critical Care Admission

Once an individual becomes seriously ill and, accordingly, his condition imposes admittance to the critical care department, the intensivist needs to be informed of the patients' QOL before the illness. To be able to correctly assess the extent to which life-sustaining treatment options should be started or not, intensivists must know the pre-morbidity QOL and the patients' preferences in the case of an acute deterioration of his health, in order to respect the patients' preferences (Capuzzo et al. 2000). In this regard, previous research has already shown that low QOL prior to critical care admission is associated with a grim prognosis in terms of survival, and leads to deterioration in the QOL (in the short-, mid- and long-term) after discharge (Oeyen et al. 2007; Goldstein et al. 1986; Yinnon et al. 1989; Vazquez Mata et al. 1992; 1996). Above, some specific critical care cohorts (e.g. patients with trauma and burn injuries) are usually healthy prior to their critical illness meaning that their perceived QOL after discharge may even drop more substantially as compared to other patient cohorts often having an already impaired QOL prior to critical care admittance (Cuthbertson et al. 2005; Flaatten et al. 2006).

Contrary to the common perception of intensivists, QOL after critical illness is worse than before. Hence, it could be argued that it is important to systematically assess patients pre-morbidity QOL, (or at least specific subgroups of patients) at the time of critical care admittance. This is a major challenge, not only for patients, but for all healthcare providers taking care for these patients as well. As interventions aimed to improve

long-term outcomes after critical illness are not widely documented and research on this topic is still in its infancy, this should become a high priority in the near future.

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