Quality of life assessment methods and rehabilitation after acute pancreatitis

[1]Oana N. Banc, [2]Mihaela Mocan, [3]Anca D. Farcaș

[1]Regional Institute of Gastroenterology and Hepatology "O. Fodor" – Gastroenterology I, Cluj-Napoca, Romania; University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania; [2]Emergency Clinical County Hospital – Internal Medicine Department, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania; [3]Emergency Clinical County Hospital - Cardiology Department, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania.

Abstract. Currently, quality of life (QoL) is a subject of utmost importance in medical research. Thus, for a better quantification of the burden of the disease, treatment and the efficiency of rehabilitation programs on health, a variety of QoL assessment tools such as questionnaires, surveys or scales were developed. Acute pancreatitis (AP) is an inflammatory disease with a great impact on health status, but the literature regarding QoL in AP patients is scarce. The present review aims at identifying the QoL assessment tools appropriate for the patients with AP.

Key Words: quality of life, acute pancreatitis, rehabilitation

Corresponding Author: M. Mocan; e-mail: mihaela.mocan@gmail.com

Introduction

Measuring the quality of life (QoL) improvement after diagnostic and therapeutic intervention, both in chronical and acute diseases has become a subject of great importance in the last decade (Fărcaș et al 2018). The costs of the interventions which improve the QoL should be reviewed because how the patient feels can quantify the burden of the disease and of its therapy (Pezzilli et al 2012; Sherbourne et al 2001; Guyatt et al 1989). Thus, the way patient perceives the quality of his life represents the main point in the evaluation of interventions, especially in patients with chronic conditions (Pezzilli et al 2012). Nowadays, when a patient's QoL is evaluated the medical aspects are put aside, and the focus is on the subjective perception about his own overall well-being. Some of the premises in increasing QoL are represented by increasing life expectancy, reducing pain and symptoms, solving psychological and social conflicts, or eliminating economical stress regarding medication or therapy. To evaluate the QoL in medicine means to have a real appreciation of patient's condition, of working capacity, the evolution of the disease, the treatment efficiency, to compare the benefits of the different methods of treatment and to define the best programs for them. The evaluation of QoL is determined by doctors using the questionnaires completed by patients.

Acute pancreatitis (AP) is an inflammatory disease of the pancreas with a polymorphic clinical setting with high mortality risk. AP incidence has been increasing in the last decade. AP can be divided according to its severity in 3 groups, from the mild form, to moderate and severe form. While the majority of AP cases are mild and self-limited, about 20%-30% of the cases

are severe, and more than a half of these patients are prone to life-threatening complications (Beuran et al 2018; Banc et al 2017; Bhatia et al 2000). In AP, QoL decline is influenced by the severity of the disease, being worse in severe pancreatitis. The literature appreciating the QoL in AP is scarce and some of the assessment tools are not fitted for appreciating an acute disease. Thus, the present review aims at identifying the QoL assessment tools appropriate for the patients with AP.

Changes in the QoL in patients with AP

From the QoL perspective, AP affects the patients' life and activity in general, including health, vitality, and physical condition, the mental and emotional status and then all the aspects derived from this deficit: social life, family life, frequently associated with financial decline. The domain referring to general health focuses on the patient's ability to conduct daily indoor or outdoor activities such as walking, home-cleaning, shopping, running, lifting heavy objects, climbing stairs and/or getting dressed. Furthermore, the vitality domain assesses the consequence of daily effort on patients' energy whether or not they feel energized or powerless and fatigue during or after a disease such as AP (Pendharkar et al 2014; Ware 2000; Ren et al 1998). A very representative study is the one of Pezzilli et al (2012) who explored the QoL in 40 patients with AP treated medically during the acute phase and at 2 and 12 months after discharge (Szentkereszty et al 2004). The majority of the investigated patients had a mild form of AP. This study used two questionnaires which were completed at 2 and at 12 months after discharge: The Medical Outcome Study 12-Item Short-Form Health Survey

(SF-12) and European Organization for Research and Treatment of Cancer QoL Questionnaire-C30 (EORTC QLQ-C30). They found that "two physical and mental component summaries of the SF-12, all the domains of the EORTCQLQ-C30 (except for physical functioning and cognitive functioning) and some symptom scales of the EORTC QLQ-C30 (fatigue, nausea/vomiting, pain, and constipation) were significantly affected during the acute phase" (Pezzilli et al 2012). The studies revealed that the physical condition evaluated by EORTC QLQ-C30, at the onset of AP was significantly modified by severe AP as compared to mild AP. A significant improvement of the health, vitality, and physical condition was registered at 2 months after discharges compared to the initial evaluation. After 12 months the mental component remained affected in AP patients as compared to the general population. This study showed two different patterns of QoL modifications: at first both the physical and mental components were affected, but only the mental component remained impaired in the follow-up period (Pezzilli et al 2012).

Another important review in medical literature is the one of Pendharkar et al (2014) which is a meta-analysis including 16 studies. They were prospective cohort studies involving 687 patients with AP. According to the authors, the studies had a medium quality. No investigations regarding the effect of a specific intervention on QoL in AP were made. The studies used different scales and questionnaires such as: RAND 36-item health survey (SF-36), EORTC QLQ-C30, SIP Score, Hospital Anxiety Depression Scale and Cantril Ladder, Karnofsky and Rankin Scores, Rosser Disability and Distress Index, Function Assessment of Chronic Illness Therapy Scale, the Gastro-Intestinal QoL Index. This systematic review and meta-analysis concluded that the QoL may be affected in patients after AP (Pendharkar et al 2014).

Both studies underline the variety of tools that evaluate the QoL after AP. This diversity makes it difficult to compare the outcomes and the effect on the QoL of different treatment approach worldwide. Moreover, there is a gap in the guidelines for the management of AP regarding what type of QoL tool should be used.

The American College of Gastroenterology (ACG) Guideline in the Management of AP recommends nutritional rehabilitation for improving the QoL. In the past, most guidelines recommended clear liquid diet in order to put the pancreas at rest, waiting for the pain to disappear, for pancreatic enzymes to come to normal or for the imagistic resolution of pancreatic inflammation (Tenner et al 2013; Steinberg et al 1994; Banks et al 2006). All these criteria for oral feeding restart in AP are not important now. Moreover, there is strong evidence that early oral feeding indirectly improves QoL in AP, having benefits such as: a shorter stay in hospitals, less infectious complications and decreased mortality (Tenner et al 2013; Petrov et al 2006; Louie et al 2005; Casas et al 2007; Gupta et al 2003; Yi et al 2012). Some recommendations regarding early oral feeding are still available: for example, oral low-fat diet may be initiated in the absence of nausea, vomiting and severe abdominal pain in mild PA, while enteral nutrition is recommended in severe AP to prevent infections (Ware 2000). Thus, we considered that a review of the assessment tools available at the moment could be useful for clinical practice.

Quality of life assessment methods

1) The RAND 36-item health survey (SF-30)
The Short Form 36 (SF-36) incorporates 36 questions classified into 8 groups: physical working, bodily pain, general well-being, vitality, social working, psychological well-being, job working physical and job working passionate. It gives 8 profiles or 2 aggregate profiles. The advantage of this survey is that it can be made even at telephone or mail and it takes about 10 minutes. It has a high internal consistency, validity and sensitivity (Ware et al 1992). All these items could be affected in patients with AP. Even though it is complex, SF-30 was developed for general purposes, and not for a specific acute illness, which represents a disadvantage.

2) European Organization for Research and Treatment of Cancer QoL Questionnaire Core 30 (EORTC QLQ-C30)
The EORTC QLQ-C30 is one of the most generally utilized instruments for evaluating well-being related QoL in patients with malignant growth. It is a center conventional poll related with various malady explicit modules. In patients with AP every area of the EORTC QLQ-C30, aside from physical working and psychological working were disabled on short term follow-up. EORTC QLQ-C30 is a diseases specific tool, targeting cancer patients, and is not entirely fitted for an acute illness, such as AP (Pezzilli et al 2009; Wierzbowski et al 2009; Heider et al 2004).

3) The Sickness Impact Profile (SIP)
The Sickness Impact Profile is a typically based instrument used to assess apparent well-being status in patients being treated for conceivably deadly condition. It is a standardized questionnaire for assessing the effects of illness on function. It incorporates 136 inquiries isolated in 12 classifications: 5 worried about freedom, 3 with physical action and 4 with mental practices. The disadvantage is that it takes a long time to complete it but it can be made by telephone (Yfantopoulos et al 2001).

4) Karnofsky Performance Status Scale
The Karnofsky Performance Scale Index is an appraisal tool for practical disability. It tends to be utilized to contrast adequacy of various treatments and with survey the forecast in singular patients. In many genuine diseases, the lower the Karnofsky score, the lower the probability of endurance (Altilio et al 1993; de Haan et al 1993; O'Toole et al 1991). It is a generic scale that lacks specificity, and no direct conclusion could be drown regarding the treatment efficacy.

5) The modified Rankin Scale (mRS)
The Rankin Scale is a usually utilized scale for estimating the level of incapacity or reliance in day by day exercises of individuals who have endured a stroke or other cerebrovascular diseases associated with neurological disability. It has become the most broadly utilized clinical assessment tool in patients with stroke (Wilson et al 2002; Saver et al 2010). Even though it was used in clinical studies assessing AP, it is specially designed for patients with neurological disabilities which are not present AP.

6) The Functional Assessment of Chronic Illness Therapy (FACIT) Measurement System

FACIT is an assortment of well-being related QoL (HRQOL) surveys focused on assessing QoL in chronic diseases. The overview incorporates more than 400 inquiries, some of which have been converted into in excess of 45 dialects. Appraisal of any patient is customized so that the most-applicable inquiries are posed and organization time for every evaluation is generally under 15 minutes. There are watched four essential QoL domains: physical prosperity, social/family prosperity, emotional well and practical prosperity. The time to complete the survey is about 5–10 minutes (Kimberly et al 2003). This system is generic, designed for chronic illness, which is not the case in AP.

7) The Rosser Classification of Illness States Scale

The Rosser index estimates distress and incapacity through 8 classes of handicap (from no inability to oblivious) and 4 degrees of pain (ranging from no distress to mild, moderate or severe distress). The Rosser index has the advantage of being a quick method with the scores that are contrasted with a valuation grid acquired from 70 respondents from various foundations (Fenton-Lee et al 1993).

8) Hospital Anxiety Depression Scale

The HADS (Hospital Anxiety and Depression Scale) plans to evaluate psychiatric symptoms such as anxiety (HADS Anxiety) or depression (HADS Depression). The HADS is broadly utilized. It has demonstrated vague outcomes regarding the prevalence of depression symptoms, with significant differences in females as compared to males. There is likewise an absence of psychometric assessments of the HADS in non-clinical examples of more seasoned individuals (Djukanovic et al 2017). It is modified in patients with AP, and mental impairment persisted in long term follow-up as showed previously (Pendharkar et al 2014). The items from HADS should be included in an ideal QoL tool for AP.

9) Gastro-Intestinal QoL Index (GIQLI)

The gastrointestinal QoL index (GIQLI) was created to evaluate HRQOL in numerous gastrointestinal maladies. The poll contains up to 36 things, scored on a five-point Likert scale in which extra modules, indicated by the specific gastrointestinal maladies, supplement a certain number of center inquiries. GIQLI was used to evaluate the correlation between the severity of PA and the QoL reduction, but unfortunately no such association was identified (Symersky et al 2006).

Future perspectives

It should be necessary to develop a specific scale to quantify the QoL in AP and in pancreatic diseases. It is important to choose a good and well-designed questionnaire regarding the QoL to see the effect of the malady and the genuine effect of the treatment. The ideal design of a QoL tool assessing AP should comprise two parts:
• One designed for short term follow-up concentrating on intense manifestations, for example, serious stomach torment lighting to the back, nausea and vomiting, oral feeding intolerance and on the response to nutritional rehabilitation.

•Another designed to screen medium-term to long haul follow-up period focusing on complication such as secondary pancreatogenic diabetes mellitus or on nutritional problems such as alcohol intake or on consumption of hypocaloric and fatty food.

Conclusion

QoL is modified in patients with AP. There is no standardized tool to the moment to evaluate QoL in AP. An ideal tool should focus on acute clinical symptoms and on nutritional rehabilitation programs outcome.

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Authors

•Oana Natalia Banc, Regional Institute of Gastroenterology and Hepatology "O. Fodor", "Iuliu Hatieganu" University of Medicine and Pharmacy, Str. Croitorilor nr. 19-21, 400158, Cluj-Napoca, Romania, banc_oana@yahoo.com

•Mihaela Mocan, 1st Medical Clinic, Department of Internal Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy, Clinicilor Street 3-5, 400006, Cluj-Napoca, Romania, mihaela.mocan@gmail.com

•Anca Daniela Farcas, 1st Medical Clinic, Cardiology Department, "Iuliu Hatieganu" University of Medicine and Pharmacy, Clinicilor Street 3-5, 400006, Cluj-Napoca, Romania, ancafarcas@yahoo.com