UNDERSTANDING THE RELEVANCE OF PAIN, DEPRESSION AND ANXIETY-LIKE MANIFESTATIONS IN THE MANAGEMENT OF CYSTIC FIBROSIS

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Abstract: Cystic fibrosis (CF) is the most frequent autosomal recessive genetic disease in Caucasians. Although epidemiological studies continue to provide data and information that could lead to a better understanding of the clinical manifestations of the disease, there are still many controversies regarding the importance of some risk factors, such as pain, depression or anxiety in the pathogenesis of this disorder and its management. In the present study, we focused on the relevance of these 3 factors in the management of CF and to their related mechanisms in this disorder. Our original data showed that pain, depression and anxiety, determined by using a specific quality of life (KINDL) questionnaire, are important in understanding this disorder, the effectiveness of treatment and could also represent important factors for improving treatment. The screening and treatment of these specific manifestations in CF patients is recommended and holds promise for improving the outcome of patients with CF.

Key words: cystic fibrosis; pain; depression; anxiety.

Received February 28, 2014; Revised January 14, 2015; Accepted January 18, 2015

INTRODUCTION

Cystic fibrosis (CF), also known as mucoviscidosis, is an important disorder considered to be the most frequent autosomal recessive genetic disease of the Caucasian race, affecting approximately 1/2500 newborns (Abbott et al., 2003). In terms of survival rate, if the 1990s life expectancy for this disorder was around the age of 17–18 years, at the moment, due to the various advances in treatment, patients may survive up to adult age (Haevermans et al., 2009; Driscoll et al., 2009). Thus, the life expectancy of people with cystic fibrosis (CF) has substantially increased over recent years so that someone with CF born in 1990 is predicted to live until around 40 years (Jaffé et al., 2011; Abbott et al., 2003; Festini et al., 2004) and this expectancy is increasing. However, although epidemiological studies from the literature continue to provide data and information that could lead to a better understanding of the clinical manifestations of the disease, there is still much controversy regarding the importance of some risk factors, such as pain, depression or anxiety on the pathogenesis of this disorder (Festini et al., 2004; Quittner et al., 2008; Haevermans et al., 2008), its variable therapeutic effectiveness and, most importantly, the general management of cystic fibrosis.

With the progressive increase in survival of CF patients, the problem of managing manifestations such as pain, depression and anxiety in these patients is gaining awareness and should be carefully assessed. In the present study, we focused on the relevance of pain, depression and anxiety in the management of CF and on the further attention that should be directed to their related mechanisms in this disorder.
MATERIALS AND METHODS

The present study was conducted on a group of 45 patients diagnosed with CF at the Pediatrics II Clinic of the “St. Maria” hospital in order to assess pain, depression and anxiety-related characteristics, with comparisons to the data provided by other studies. The KINDL questionnaire was used to collect data from patients older than 12 years and from the relatives of the children under 12 years. This scale structure includes 24 items, grouped into 6 categories, our interests being mainly focused on pain, depression and anxiety manifestations. The study took place over a period of 3 months on children diagnosed with CF and hospitalized in the clinic between May-July 2013. Data from the questionnaires were collated in tables (Microsoft Office Excel 2000), and processing was done in Epi Info 3.4.1.

RESULTS AND DISCUSSION

Regarding the 1st domain, which is mainly focused on the degree of fatigue, energy level and especially pain (in the aforementioned context) felt by the patient, we found that approximately 33.3% of our patients complained of various pain manifestations. There are very few studies regarding the relevance of pain in CF. One of these few was performed by Ravilly et al. (1996), who used the medical charts of patients and focused on the incidence and therapy of chronic pain in a group of older subjects with CF, demonstrating that chronic pain in this population increased sharply in the last 6 months of life. This points to the importance of pain perception in CF management. Their results showed that 65% of the selected patients expressed chest pain, while 55% of them reported headaches. While these were the main nociceptive manifestations, the patients also exhibited a fair proportion of abdominal, back and limb pain. Mechanistically speaking, for the aforementioned nociceptive manifestations it seems that hypercarbia or hypoxia are mainly implicated in headaches, while for the chest pain, pleurisy, pneumothorax and rib fracture were cited (Ravilly et al., 1996). Regarding the interactions established between the treatment of these manifestations and the actual management of CF, it seems that opioids could be effective, while regional anesthesia can be used to treat very severe pain.

All these aspects, and especially those regarding the possible usage of regional anesthesia in the management of CF, emphasize how serious and relevant pain problems are in the management of this disorder. In the aforementioned study of Ravilly et al. (1996), the authors reported that more than a half of patients had pain severe enough to require opioid treatment, while more than 10% of them received opioids for more than 3 months. Similar aspects were also reported in a comprehensive study on 239 Italian adults with CF carried out by Festini et al. (2004), which showed an alarming increase in the prevalence of pain, both in intensity and frequency; most of the selected patients had pain described as strong to severe, with some of them (more then 10%) reporting even more than severe pain. Also, an important number declared more than 10 episodes of the same type of pain during the experiment time (Festini et al., 2004). In this area of research, increased attention has been paid towards other pain symptoms, apart from those that are very specific to CF, such as acute pneumothorax and pulmonary exacerbations (Ravilly et al., 1996; Festini et al., 2004). It seems that pain manifestations can be differentiated by the various subtypes of the disorder, since backache is the most frequently type of pain present in the severe form, while joint pain seems to occur most often in the recurrent form (Bilton et al., 2000; Chastain et al., 2001).

Since the relevance of pain in CF adult patients is very often underestimated, it is fundamental that an assessment of pain to be routinely performed as part of CF management care (Broome et al., 2001; Festini et al., 2004). The relevance of pain in this area of research is so increased that it was suggested by Festini et al. (2004) that a pain-management specialist should be included on the staff of CF centers or should be among the professionals to whom the center can refer on a routine basis. When we tested the 2nd domain, which is represented by the emotional status, almost 62.2% of the subjects revealed anxiety state manifestations, together with depression-like manifestations such as uncertainty and loneliness.
This was also tested in some previous studies, although there are very few data in the literature (Quittner et al., 2008; Havermans et al., 2008). On the other hand, there are still enough studies demonstrating that patients with chronic illnesses are at an increased risk for depression, with serious direct and indirect consequences to their health outcome (Simon et al., 2001; Diminić-Lisica et al., 2010). Other authors have shown that both anxiety and depression could represent important risk factors for poor adherence to therapy and increased mortality (DiMatteo et al., 2000; Snaith et al., 2003; Havermans et al., 2008). Thus, the screening for anxiety and depression may help in the development of treatment programs and better management of CF.

In general, the very few studies of the importance of depression in CF subjects or their caregivers have found increased depressive manifestations (Quittner et al., 2008), similar to our findings. However, there are many controversies in this area of research, since some authors have reported that adults with CF are actually healthy from a psychological point of view (Anderson et al., 2001), while others (Riekert et al., 2007) have demonstrated the increased importance of depressive symptoms in adults with CF, even after controlling and managing the lung functioning. There are also reports, such as that of Havermans et al. (2008) on 57 CF patients, showing no significant differences in terms of anxiety and depression, as compared to selected non-CF subjects (Havermans et al., 2008; Pfeffer et al., 2003). Havermans et al. (2008) demonstrated that even after taking care of some specific aspects, such as controlling lung functioning, the selected depressed patients with CF showed decreased specific scores for emotional functioning, eating disturbances and body image, while those with anxiety had increased problems with vitality and health perceptions. Thus, it seems that these depressive or anxiety-like manifestations in CF subjects are quite important, especially since the complications of the illness and its therapy are additional loads of suffering for these patients (Festini et al., 2004).

Quittner et al. (2008) showed that although some well-validated screening tools for depression are available, they are not currently utilized in CF management. There is an urgent need to evaluate the relevance of some psychological and pharmacological interventions in treating depression and anxiety in this disorder (Quittner et al., 2008).

All of the aforementioned aspects were confirmed by the results we obtained in our study for the third domain that referred to self-image, which can be also correlated with depression and anxiety-like manifestations (Orth et al., 2014). Contradictory results were also observed in this case, since 47.7% of the selected subjects manifested problems in this domain (almost half of the patients with CF, while the other half was not affected). The aforementioned aspects were also confirmed by the results our group obtained for the 4th and 5th domains of the KINDL questionnaire we used, and mainly referred to family relations (altered in 62.2% of the patients) and social integration (53.3% of the subjects), respectively, aspects which can be correlated with depression (Ramos et al., 2003) and could also have an important relevance in the management of CF.

CONCLUSION

The data presented here demonstrate that pain, depression and anxiety are significant risk factors for an effective management of CF. In this way, screening and treatment of this specific manifestations in CF patients is recommended and holds promise for improving the outcome of this disorder.

REFERENCES


