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Nursing and quality of life in patients with atrial fibrillation before and after radiofrequency ablation

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Abstract

The importance of nursing and patient quality of life is a top concern for medical professionals. Therefore, participation by medical professionals in raising awareness and continuously supporting improvements in nursing care is an essential part of improving patient quality of life. Modern medical techniques and procedures are changing rapidly, particularly in the field of cardiology. This has resulted in changing roles and increased responsibility for nurses and confirms the necessity for changing the perception of nurses relative to their role in the medical environment and to patient care. This paper presents the results from the first phase of a research project and focuses on quality of life and problematic areas associated with the needs of patients with atrial fibrillation before and after radiofrequency catheter ablation. Atrial fibrillation is one of the most common supraventricular arrhythmias. Its incidence in the general population has risen significantly over the last twenty years. The objective of this research was to assess those areas, which are considered by patients to be problematic before therapeutic intervention. The research was realized through a quantitative survey using a modified questionnaire. Results showed that AF reduced the quality of life both physically and psychologically (i.e. increased levels of anxiety and depression). Results also showed that radiofrequency catheter ablation was able to alleviate symptoms associated with AF and was also able to increase patient quality of life.

Abbreviation:

AF	- atrial fibrillation
fi	- relative frequency
ni	- absolute frequency
P	- Pearson chi square test
QoL	- Quality of life
SF-36	- Short form (36) Health Survey
RFA	- Radiofrequency catheter ablation

INTRODUCTION

There has been major scientific and technological progress over the last decade in the field of medicine and also in the separate scientific field of nursing. This, consequently, has effects on the quality of nursing care and patient quality of life (Farkašová *et al.* 2006; Plevová *et al.* 2011). Quality of life of patients is the first priority for medical professionals and good nursing care is important

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to the quality of life of patients. Therefore, participation by medical professionals in raising awareness and continuous support of nurses and support for improvements in nursing care is essential to the primary goal of medicine. Medicine is rapidly developing and moving forward in terms of science and technologies, particularly in the field of cardiology. These rapid changes are creating new responsibilities for and demanding more from nurses. For nursing to respond there must be a change in the perception and status of nurses. It is necessary to increase the prestige of nurses within the medical community. To achieve this objective, nursing, as a scientific discipline, requires professionally educated nurses, who are able to provide nursing care at the highest quality level and the merits of these nursing goals need to be actively promoted, supported and developed in clinical practice (Klemsová 2009).

Atrial fibrillation (AF) is the most common supraventricular arrhythmia and occurrs in 1–2% of the general population (Stewart *et al.* 2001; Táborský and Heinc 2012). Its incidence increases with age. Recurrences are common in patients with AF and, consequently, it is considered to be a chronic condition (Go *et al.* 2001; Camm *et al.* 2010). Clinical effects vary among patients, depending on the arrhythmia pattern and presence of related symptoms (Camm 2010); however, many patients are highly symptomatic (e.g. palpitations, chest pain, shortness of breath, and fatigue) (Fuster *et al.* 2006). Symptoms are often accompanied by reduced quality of life (QoL) (Thrall *et al.* 2006; Lane *et al.* 2009). Additionally, AF associated anxiety and depression can further impair QoL (Zigmond and Snaoth 1983; Brenes 2007), with depression reported as the strongest independent predictor of quality of life in AF patients (Thrall *et al.* 2007). Patients with AF have lower QoL scores compared with healthy controls and even compared to patients with coronary heart disease (Thrall *et al.* 2006). However, most studies focused on highly selected patients undergoing interventional procedures like AF-related surgery or pharmacologic therapy. QoL in the general AF population, however, has scarcely been assessed (Thrall *et al.* 2006).

Radiofrequency catheter ablation (RFA) is an increasingly recommended method of treatment for AF and was noted as such in the European Society of Cardiology recommendations from 2012. These guidelines mention the fact that catheter ablation can be recommended as a first-line treatment for AF in specific patient cohorts (Wazni *et al.* 2005; Calkins *et al.* 2009; Camm *et al.* 2012). RFA is a modern mini-invasive treatment method. AF can be completely eliminated in the majority of patients, especially in those with the paroxysmal form of the arrhythmia. In addition, the patient is usually spared the chronic use of anti-arrhythmic drugs as well as chronic exposure to the drug's potential side effects. This mini-invasive treatment method results in very rapid healing with minimal nursing care requirements (Ascherman 2004; Čihák and Heinc 2004; Dítě *et al.* 2007). In connection with this disease and the chosen treatment, it is important to mention, not only the QoL, but also its specifics. Nursing care addresses the following QoL domains: physical well-being, mental well-being, social relationships, somatic aspects associated with the disease and its treatment, including spirituality (Gurková 2010). This means, going beyond, *simply*, recording the clinical indicators of therapeutic success or failure, but also observing the subjective and objective data on the physical and mental condition of patients following therapeutic interventions. These areas can include, for example, the intensity of pain, fatigue, ability to provide self-care, ability to cope with stressful situations, levels of anxiety and stress. Numerous methods, particularly questionnaires, have been developed to measure health-influenced QoL, e. g. questionnaire SF-36 (36-item Health Survey), which is suitable for used with cardiology patients (Payne *et al.* 2005).

MATERIAL AND METHODS

The research was performed at a tertiary centre for arrhythmia treatment (Department of Cardiology, České Budějovice Hospital, Czech Republic). The main objective was to determine the level of satisfaction with regard to the needs of patients with AF before and after RFA. In connection with this, the QoL of these patients was assessed. The following hypotheses were postulated:

1. The QoL of respondents with AF varies according to age.
2. The QoL of respondents with AF differs by gender.
3. The QoL of respondents with AF is different before and after RFA.

The level of satisfaction with regard to the needs of patients with AF was assessed using a modified SF-36 questionnaire. SF-36 is a standardized tool used to evaluate the QoL of patients and the effects of a particular treatment on health status. The sample included 264 patients with AF before RFA and the same 264 patients after ablation. The post-RFA survey was conducted within a year of the index intervention. Since consecutive patients we included in the trial, the study sample was deemed to be fairly representative.

Statistical analysis

Descriptive statistics were used for the interpretation of results. Continuous variables are presented as a mean ± standard deviation; events are presented as absolute numbers with percentages. Categorical variables were evaluated using the χ^2 test. P values < 0.05 were considered to be statistically significant. QoL was specifically tested in seven predefined domains: mobility, self-care, day-to-day performance, occurrence of pain, depression or anxiety, and current status assessment.

RESULTS

Baseline demographic data of patients is listed in Table 1. Results from the first phase of the quantitative research showed that out of 264 interviewed respondents with AF before catheter ablation, when divided according to age group, there was a consistent decrease in QoL in 78%, 76%, 62%, 60%, and 50% of patients aged over 81 years, 71–80 years, 61–70 years, 51–60 years, and 41–50 years, respectively. Only 1% of AF patients younger than 40 had a decreased QoL (Figure 1, p=0.06). When analyzing the effect of AF by gender, QoL was significantly lower in 66.5% of male respondents and 80.2% of female respondents (p=0.015) (Figure 2).

In connection with pre-specified domains of evaluation before RFA, 28.8% of respondents reported mobility problems. Moderately severe self-care problems were reported in a very low proportion of patients (4.2%). When performing day-to-day activities, 23.5%

Tab. 1. Baseline descriptive characteristics of the patients included in the study).

Demographic data	
Total number of respondents	264
Men / Women	158 (59.8%) / 106 (40.2%)
Average age (years)	63.6±9.6
Patients with paroxysmal AF	139 (52.7%)
Patients with persistent AF	125 (47.3%)
Associated diseases	
Hypertension	182 (68.9%)
Diabetes mellitus	61 (23.1%)
Hyperlipoproteinemia	59 (22.3%)
Previous stroke	16 (6.1%)
Ischemic heart disease	46 (17.4%)

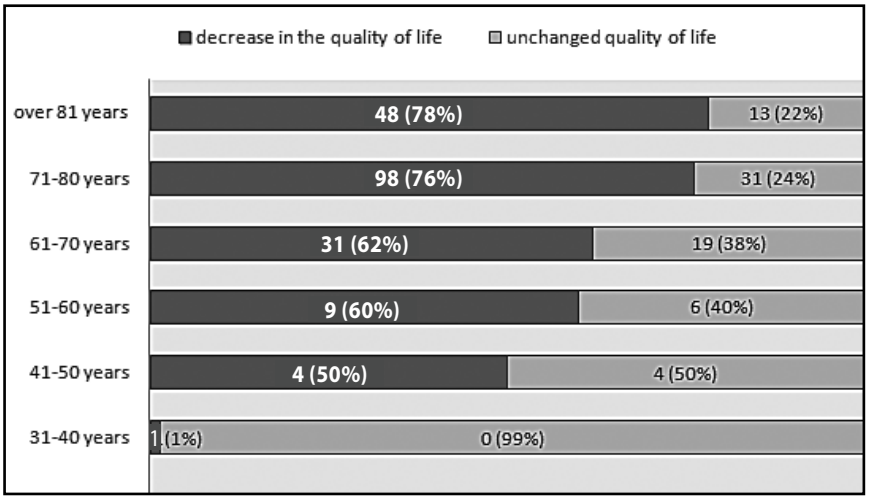

Fig. 1. Impact of atrial fibrillation on quality of life relative to age (n=264)

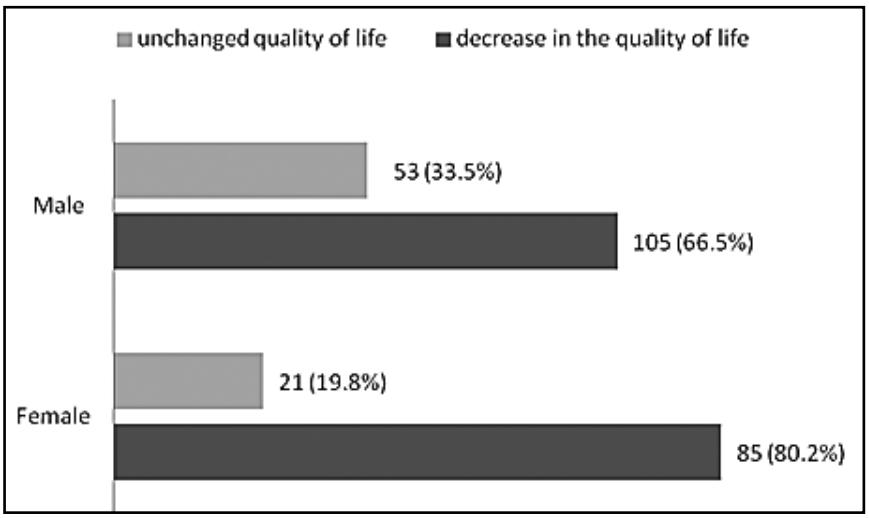

Fig. 2. Impact of atrial fibrillation on quality of life by gender (n=264). Significantly more women reporting a decreased quality of life (p=0.015).

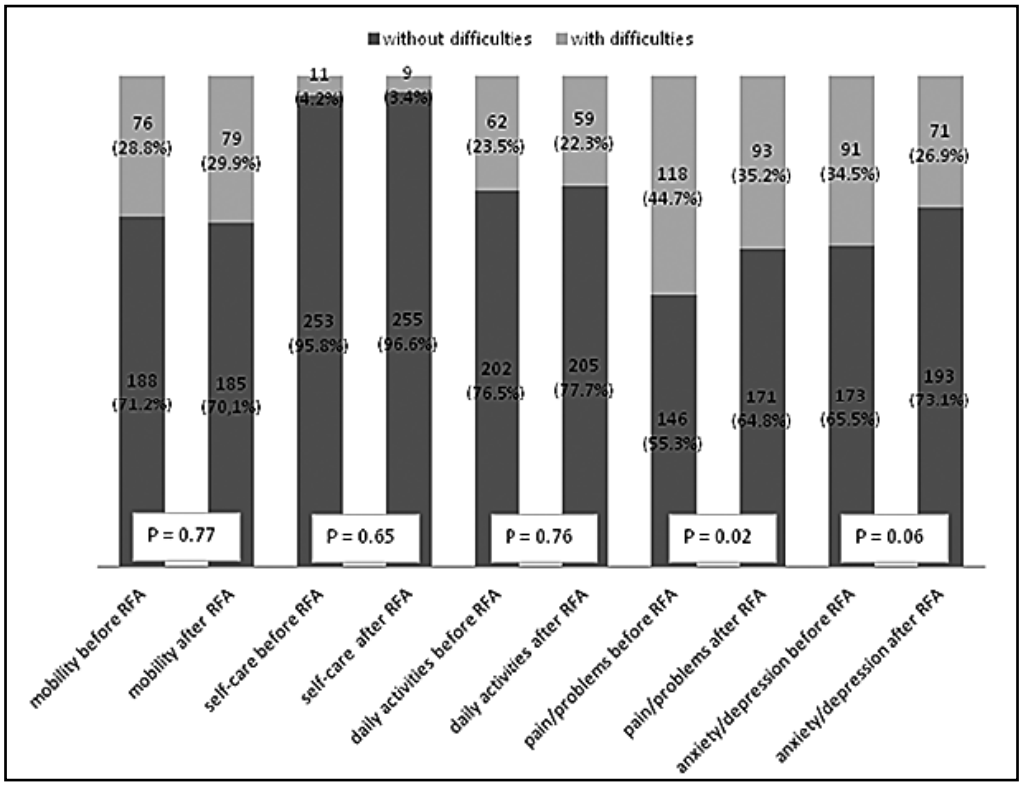

Fig. 3. Comparison of the quality of life of patients before and after radiofrequency catheter ablation.

of respondents reported some difficulties. Pain or difficulties were reported by 44.7% respondents. With regard to the mental status of patients with AF before RFA, 34.5% of the respondents reported depression and anxiety.

To determine the QoL of respondents with AF relative to RFA, the same domains were evaluated within one year of the RFA intervention. 70.1% of respondents rated mobility as "without problems", however, 29.9% still registered some difficulties with walking (p=NS). 96.6% of respondents reported no problems with self-care, while 3.4% of respondents reported that it was still challenging, mainly in terms of dressing and hygiene (p=NS). Normal daily activities still required a moderate level of exertion for 22.3% respondents (p=NS). Moderate pain or difficulties were reported by 35.2% of patients (p=0.02). 73.1% of respondents reported no concerns relative to mental status, 26.9% reported intermediate problems – depressions and anxiety (p=0.06). The results are summarized in Figure 3.

DISCUSSION

Our study confirmed that AF could significantly affect patient QoL. Moreover, our data showed that QoL significantly decreased with increasing age of AF patients. Other authors have also (Noheria *et al.* 2008; Bytešník 2009) pointed to this fact. They claim, that the prevalence of AF increases with age. QoL changes were assessed on a 0–100% scale and we can consider improvements greater than 75% to be relevant. In addition, QoL self-assessments in AF patients varied by gender: more than four fifths of female respondents reported a reduced QoL, whereas only two thirds of male respondents made the same claim. These results are comparable with findings of other authors (Ascherman 2004; Čihák and Heinc 2004), who have reproted that individuals with AF tend to have a lower QoL, which could also be influenced by treatment and related complications and related side effects. After an AF diagnosis, individuals often face limitations relative to their professions and pastime activities.

When evaluating problematic domains for patients with AF before RFA, pain and other difficulties were the most challenging (44.7% of respondents), followed by mental status, with 34.5% respondents expressing anxiety and depression. Anxiety and depression can further impair QoL and depression was reported as the strongest independent predictor of QoL in AF patients (Hendriks *et al.* 2013). Hendricks also commented on the important role of nurses in patient care. Nurses can significantly influence mental and psychological problems through effective communication and patient education.

In the area of mobility, respondents reported some difficulties with walking, which, subsequently, caused restrictions at their workplace. Self-care was the best rated area – respondents reported minimal problems with dressing and hygiene. Activities of daily living were also assessed positively.

When comparing respondent results before and after RFA treatment, there was an improvement in QoL in all areas, however, only changes in the "pain and other difficulties" category was statistically significant and changes in the mental status before and after RFA

revealed only a trend toward improvement. The main limitation of the study may be the presence of various comorbidities among the sample group. An unequal distribution of, for example, diabetes, or ischemic heart disease, could affect QoL results. This confounding factor lead Schron and Jenkins (2005), Yadav and Scheinman (2003) to claim, that AF is a chronic illness typically of older people who may have comorbidities requiring various therapies, complete with associated side effects, that could negatively impact QoL.

Nevertheless, based on the information regarding pain or other difficulties and physical and mental health improvement, we concluded that RFA is an effective form of therapy. Therefore, catheter ablation can be highly recommended as a treatment method that positively affects patient QoL. This sentiment is also expressed in the current European Society of Cardiology recommendations (2012). According to the guidelines, catheter ablation is recommended as a first-line treatment for AF (Camm *et al.* 2012). Still, it is important to remember that despite the advances in techniques and technologies used in the modern cardiology, treatment needs to include a complete assessment of patient needs and outcomes need to measure by more than just the success of the ablation.

We found that the quality of life of respondents had improved after the intervention procedure. Thus, the results formed the basis for the next phase of the research, focusing on the role of nurses in providing nursing care to patients with AF as well as those recovering from radiofrequency catheter ablation. This further research will be aimed at identifying nurse/patient interactions that impact the quality of nursing care and as such, the quality of patient care.

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