Available online at www.sciencedirect.com

ScienceDirect

journal homepage: http://www.elsevier.com/locate/kontakt

Original research article

Quality of life of patients after lung transplantation

Lenka Špirudová [a,*], *Jaroslav Nol* [b]

[a] *Silesian University in Opava, Faculty of Public Policy, Institute of Nursing, Czech Republic*
[b] *Charles University in Prague, Prague-Motol University Hospital, Pneumology Clinic, Czech Republic*

ARTICLE INFO

Article history:
Received 29 April 2013
Accepted 21 December 2013
Available online 20 February 2014

Keywords:
Quality of life
Patient
Lung transplantation
Nursing
Education
Support

ABSTRACT

The study is the first tentative nursing probe into the quality of life of Czech patients after lung transplantation. The main objective of the study is to determine the quality of life in adult patients after lung transplantation in the Czech Republic and point out ways in which nursing can contribute to improving the quality of life of these patients.

The study used a combination of two standardized questionnaires: the SF-36, which examines eight dimensions of the quality of life, and the EQ-5D-5L, which examines six dimensions of the quality of life. In total, the sample of respondents comprised of 61 patients, representing 67.80% of the total population of living adult patients who had ever undergone lung transplantation in the Czech Republic. The results of the study correspond to published information on the progress of the quality of life in patients after lung transplantation, namely: after lung transplantation, the quality of life is significantly improved (peak improvement occurs in the period between the 13th and 36th month); however, over time, it deteriorates again. In our study, deterioration in overall health was recorded as an increasing trend from about the fourth year after transplantation. According to the SF-36 and EQ-5D-5L questionnaires, the studied sample of lung transplant patients exhibited the most significant variations in the quality of life, compared with the general population, in the following areas: *social functioning*, *bodily pain*, *physical limitations – mobility*, and *emotional problems such as anxiety or depression*. Based on the results, a new methodology is proposed to nurse-specialists concerning continuous long-term support work with lung transplant patients, which could be effective and could bring relief to patients in areas they assess as difficult to manage.

Introduction

Lung transplantation is a serious interference with the patient's life, which on one hand brings hope for a better life without a number of restrictions; on the other hand, it is necessary to deal with other issues that the chronically ill patient so far has not become familiar with (e.g. the need for prolonged immunosuppression; having a foreign organ inside your body as an integral part of one's self instead of oxygen equipment, and other issues). For many patients (children and adults) with a devastating lung disease (see Table 1), lung transplantation is the last treatment option. In the Czech Republic, this highly specialized treatment is

* *Corresponding author at*: Slezská univerzita, Fakulta veřejných politik, Ústav ošetřovatelství, Hauerova 728/4, 746 01 Opava, Czech Republic. E-mail address: lenka.spirudova@fvp.slu.cz (L. Špirudová).

http://dx.doi.org/10.1016/j.kontakt.2013.12.002

Table 1 – Summary of medical diagnoses that were the cause for lung transplantation in patients at the Motol FN (UH) until 1/10/2012.

Medical diagnosis as an indication for lung transplantation in the patient	Absolute frequency	Relative frequency
CF – cystic fibrosis	16	17.80
CHOPN (COPD) – chronic obstructive pulmonary disease	40	44.44
PF – pulmonary fibrosis	14	15.55
KFA (CFA) – cryptogenic fibrosing alveolitis	9	10.00
EAA – extrinsic allergic alveolitis	3	3.33
LAM – lymphangioleiomyomatosis	5	5.55
IPAH – idiopathic pulmonary arterial hypertension	1	1.11
PCD – primary ciliary dyskinesia	1	1.11
CPFE – combined fibrosis and emphysema syndrome	1	1.11
Total	90	100.00%

performed only at the University Hospital in Prague in Motol [1].

Lung transplantation

Lung transplantation (*lung transplantation – LuTX* [*LT*]) is indicated for patients in the terminal stages of lung disease, when the estimated survival time is 1–1.5 years, after all conservative treatment options have been exhausted, and the health status continues to deteriorate [2, p. 234]. This method brings a chance of prolonging life and improving its quality to patients with an otherwise incurable and frequently fatal disease [3, p. 21].

''*Historically, the first lung transplant was performed by James Hardy and colleagues in 1963 in the USA, when he decided to remove and replace the left lung of a 58-year-old man suffering from cancer and chronic glomerulonephritis. After surgery, the patient underwent irradiation using cobalt and received immunosuppressive therapy with antimetabolites (Imuran). He died on the eighteenth day from kidney failure, although, in addition, his autopsy revealed a suture fistula in the unhealed bronchus*'' [4, p. 147].

''*Initially, these operations did not produce good results; therefore, they were performed no more than sporadically. Only in the 1980s, the development of immunosuppressive therapy and the introduction of cyclosporine led to further development of transplantation medicine. Before the development of cyclosporine, immunosuppression consisted in the administration of large doses of corticosteroids, which worsened wound healing and led to a number of infectious complications, which killed the patients in the first six months after transplantation*'' [2, p. 234].

The first single lung transplantation in the Czech Republic was performed in December 1997, and transplantation of both lungs was performed a year later [2, p. 23]. By the end of 2007, a total of 28,488 lung transplants had been performed worldwide. At present, approximately 2700 such procedures are performed annually in one hundred and fifty specialized centres [5, p. 11]. In the Czech Republic, 14 lung transplants were performed from 1/1/2012 to 30/9/2012.

According to statistics, the need for lung transplantation in the Czech Republic ranges from 3 to 5 per million inhabitants per year, 70–80% of patients live for one year after lung transplantation, 50–55% of patient live for at least five years, and 25% of the operated patients live for more than 10 years after the surgery [6]. Survival time is determined mainly by primary diagnosis and the general state of the organism. In the Czech Republic, around 40–50 patients are on the waiting list. About 20 transplants are performed annually. The reason for such a ''small'' number of lung transplants is the small number of suitable lung donors. Several types of lung transplantation are performed: *unilateral lung transplantation* is the most common. It is particularly suitable for the elderly and for those who also suffer from other associated diseases. It is performed in patients with chronic obstructive pulmonary disease (COPD), idiopathic pulmonary fibrosis (IPF), and sarcoidosis. *Bilateral lung transplantation* – is required in diseases where there is recurrent chronic inflammation, most commonly in patients with cystic fibrosis (CF). *Living-donor lobar lung transplantation* – is rarely indicated in paediatric patients. One lung lobe, most commonly from one of the parents, is transmitted to the affected area. The most extensive and major procedure is *heart–lung transplantation* [7, p. 261].

Quality of life

Quality of life has many definitions; however, they all basically attempt to define elementary life satisfaction as a multidimensional existential phenomenon. The work of Olišarová et al. [8, pp. 14–21] provides both an overview of the definitions and an overview of the studies completed on the quality of life in relation to various clinical conditions in the Czech Republic since 2000. ''*Research on the quality of life in health care was initiated in the 1970s and was generally potentiated by two factors. The first, pharmaco-economic factor was the need to assess the financial cost and effectiveness of treatment (due to the increasing pressure to reduce costs) as well as the need to identify priorities in the event of allocation of resources. The second factor was an effort to comprehensively document the clinical success of treatment, or more precisely, of therapeutic interventions on the patient's health status*'' [9, p. 41]. This fact has led to the emergence of the so-called concept of HRQoL (Health-Related Quality of Life). ''*In general, it can be said that health-related quality of life is primarily concerned with professionally provided health care, and it becomes an important indicator of its outcome*'' [10, p. 6]. A number of standardized questionnaires are available for measuring quality of life; however, there is no universal instrument that would be generally acceptable.

In an attached summary, the work of Olišarová, Dolák, Tóthová [8, pp. 14–21] has included studies on the quality of life in the area of transplantology as well; however, these studies only examined the quality of life in haematological patients (from 2000 to 2010). So far, no other studies from the area of transplantology have been registered in the Czech Information System for the collection, processing, and use of the results of research, development, and innovation (IsVaVaI [The R&D Information System]) since the year 2000. Therefore, from this perspective, our study has probably been the first tentative probe to assess Czech patients' quality of life after lung transplantation.