

Original Research Reports

Quality of Life and Mental State After Sight Restoration by Corneal Transplantation



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Background: *Quality of life has frequently been reported to improve after corneal transplantation. However, mental status before and after surgery has until now been less well investigated.* **Objective:** *The aim of this study was to investigate quality of life and mental status before and after corneal transplantation including postoperative immunosuppression and visual acuity.* **Methods:** *A total of 45 patients were assessed before, and 3 weeks and 4 months after transplantation using the following questionnaires: Visual Function Questionnaire, Beck Depression Inventory, and Hamilton Anxiety Rating Scale. Assessment included a visual acuity test using the logMAR chart, and recognition of the role of postoperative immunosuppression. Finally,*

patients were asked if they would be willing to have the surgery again. **Results:** *In the candidates for surgery, quality of life was reduced, and symptoms of depression and anxiety were present. Corneal transplantation improved their quality of life and reduced symptoms of depression and anxiety. Changes in quality of life and in mental state were associated with a change in visual acuity in the grafted eye. Higher doses of prednisone were associated with a worse quality of life and with more severe symptoms of depression and anxiety after transplantation. Further, 82.5% of patients would have the surgery again.* **Conclusion:** *Assessment for psychiatric symptoms should be considered in individuals facing corneal surgery.*

(Psychosomatics 2016; 57:414–422)

Key words: corneal transplantation, quality of life, visual function, blindness, corneal surgery.

INTRODUCTION

Corneal transplantation (keratoplasty) belongs to the group of tissue transplants and is the most commonly performed procedure in transplant surgery.^{1,2} It is also one of the most promising forms of graft.^{3–5} However, according to a World Health Organization report, corneal diseases are the second cause of blindness after cataracts.⁶ In studies published thus far, only quality of life following corneal transplantation has been assessed, using the Visual Function Questionnaire (VFQ-25) and its shortened versions. Most of these studies do not assess for psychologic variables, and most rely on brief visual functioning questionnaires that contain limited data about emotional factors.

Sight is the most important of the 5 human senses. Studies have shown the relationship between vision acuity and quality of life. Eye diseases, such as age-related macular degeneration, diabetic retinopathy,

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other retinal diseases, cataract, and corneal diseases reduce an individual's quality of life.⁷ Weakening of vision is an important risk factor for the development of emotional disorders. Negative emotional reactions such as worthlessness, and loss of control, contribute significantly to the development of depression.⁸ In patients with impaired vision, depression often remains undetected and therefore untreated.⁹ Among individuals with loss or significant weakening of vision, we see not only prolonged symptoms of depression or anxiety but also hallucinations, excessive suspiciousness, or alcohol abuse.¹⁰ In a study of patients awaiting cataract surgery, Freeman et al.¹¹ showed that individuals with poorer visual acuity often presented with symptoms of depression. However, by improving visual functions, eye surgery offers hope for improvement in the psychosocial functioning of these individuals. Paradoxically, the restoration of vision can also be associated with the onset of psychopathological symptoms. After their sight is restored, patients lose their identity and social role as blind people and are subject to new expectations.¹⁰

To prevent medium-risk corneal graft rejection, ophthalmologists use steroid eye drops. After the operation, oral prednisone is also administered, and the dosage is rapidly reduced within a few weeks. In the case of high risk of rejection, the treatment consists of a combination of steroid eye drops with generalized immunosuppressive therapy, which uses prednisone together with azathioprine or mycophenolate mofetil.¹²

In our study, we examined the effect that corneal transplantation had on quality of life and on symptoms of depression and anxiety. We also included an assessment of visual acuity and the relationship between visual acuity and mental state. The effects of immunosuppressive therapy were also investigated.

MATERIAL AND METHODS

The study was performed in accordance with the Declaration of Helsinki, and it was approved by the Bioethical Committee of the Medical University of Silesia in Katowice, Poland. Informed consent was obtained from all recruited patients.

Participants and Selection

The study group comprised 45 patients who underwent corneal transplantation at the Department of Ophthalmology of the Independent Public Clinical Hospital No. 5, Medical University of Silesia in Katowice, Poland. Subjects included men and women aged between 18 and 65 years, who were shortlisted by an ophthalmologist for corneal transplantation, and had given their informed written consent to participate in research. Exclusion criteria for the study group included lack of or withdrawal of consent to participate in research, dementia and cognitive disorders, and alcohol or other psychoactive substance dependence.

Assessment

Patients were assessed before, and 3 weeks and 4 months after corneal transplantation using the following questionnaires: VFQ-25, Beck Depression Inventory (BDI), and Hamilton Anxiety Rating Scale (HAM-A). An assessment of visual acuity was also included. The first assessment was performed during the ophthalmology consultation to confirm the need for corneal transplant in the patient. This visit was usually set 3–6 months before surgery for regular patients on the waiting list for a transplant. The patient was called for this consultation by a transplant coordinator. All regular patients had to undergo this consultation because waiting time was dependent on the indications. In our study, waiting times were up to 60 months (mean = 8.3 months). Such procedure allowed patients to prepare for the surgery. Only 5 patients were assessed the day before surgery because they were emergency cases.

On the follow-up visits, postoperative immunosuppression with mycophenolate mofetil and prednisone was recorded. Finally, 4 months after surgery, patients were asked the question: "Considering all the factors over the 4 months following transplantation, would you be willing to have the surgery again?" Patients could choose from 5 possible answers: "definitely yes," "probably yes," "I don't know," "rather not," and "definitely not."

Measures

25-Item Visual Function Questionnaire

The VFQ-25 was published by Mangione et al.¹³ It is widely used for self-assessment of quality of life in vision disorders. Brola et al. validated the

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