THE STUDY OF CORRELATION OF QUALITY OF LIFE ASSESSMENT WITH VISUAL FUNCTION AMONG KELANTAN GLAUCOMATOUS PATIENTS

By

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Pengenalan:

Pengukuran pengurangan fungsi penglihatan secara objektif seperti keluasan penglihatan dan kejituan penglihatan adalah tidak memadai dan tidak mengambarkan kualiti hidup pesakit glaukoma yang sebenar. Terkini, soalan-soalan mengenai kualiti hidup ialah cara terbaik untuk menilainya. Tidak banyak kajian dilakukan untuk menentukan korelasi antara keduanya.

Objektif:

Untuk menilai reliabiliti NEI VFQ 25 yang diubahsuai di kalangan pesakit glaukoma di Kelantan dan untuk menilai korelasi antara NEI VFQ 25 yang diubahsuai, analisis utiliti dengan pengurangan keluasan penglihatan dan kejituan penglihatan.

Metodologi:

Satu kajian lintang observasi telah dijalankan dari April hingga Oktober 2006. Sebagai permulaan, terjemahan bahasa pada soalan kajian telah dilakukan secara ke depan dan ke belakang. Kajian pilot telah dilakukan ke atas 30 pesakit glaukoma dengan menggunakan soalan yang telah diubahsuai. Proses mencari reliabiliti soalan telah dilakukan selepas kajian pilot. Seramai seratus tiga puluh empat pesakit terpilih dalam kajian tersebut. Pemeriksaan mata termasuk pemeriksaan kejituan penglihatan menggunakan carta Snellen telah dilakukan. Selepas itu, pesakit ditemuduga secara individu dengan menggunakan NEI VFQ 25 yang diubahsuai dan analisis utiliti. Akhir sekali, para pesakit melakukan ujian keluasan penglihatan (Esterman) pada kedua-dua mata secara serentak dengan menggunakan peralatan Carl Zeiss Humphrey.

Keputusan:

NEI VFQ 25 yang diubahsuai menunjukkan kekukuhan dalaman yang sederhana (Cronbach's alpha =0.74). NEI VFQ 25 diubahsuai menunjukkan korelasi positif yang penting dengan keluasan penglihatan (Esterman) pada kedua-dua mata (P<0.001). Terdapat korelasi negatif yang nyata antara NEI VFQ 25 yang diubahsuai dengan LogMAR kejituan penglihatan pada mata yang baik (P=0.009) dan juga dengan LogMAR kejituan penglihatan pada mata yang teruk (P<0.001). Skala di bawah NEI VFQ 25 yang diubahsuai menunjukkan korelasi yang tinggi dengan kejituan penglihatan pada mata yang teruk dibandingkan dengan mata yang baik. Skala di bawah NEI VFQ 25 yang diubahsuai menunjukkan korelasi yang lemah hingga kuat dengan keluasan penglihatan (Esterman) pada kedua-dua mata. Korelasi negatif yang penting terdapat antara analisis utiliti yang diubahsuai dengan LogMAR kejituan penglihatan pada mata yang baik (P=0.010) dan yang teruk. Korelasi positif yang penting terdapat antara analisis utiliti yang diubahsuai dengan keluasan penglihatan (Esterman) pada kedua-dua mata.

Kesimpulan:

Kesahihan dan reliability NEI VFQ 25 yang diubahsuai adalah mencukupi. NEI VFQ 25 yang diubahsuai boleh diaplikasikan pada populasi yang menggunakan Bahasa Melayu sebagai cara untuk menilai kualiti hidup. Korelasi penting terdapat antara NEI VFQ 25 yang diubahsuai dengan keluasan dan kejituan penglihatan pesakit glaukoma. Analisis utiliti diubahsuai juga menunjukkan korelasi penting dengan keluasan dan kejituan penglihatan pesakit glaukoma.

ABSTRACT

Introduction:

Objective approaches of measuring the visual function impairment such as visual field and visual acuity are inadequate and do not totally reflects the true quality of life in the glaucoma patients. Currently, questionnaires are used as the health related quality of life instruments. Only few studies has been done to assess the correlation between the two.

Objective:

To evaluate the reliability of the modified NEI VFQ 25 in the Kelantan glaucomatous patients and to correlate the modified NEI VFQ 25 and utility analysis to the visual field and visual acuity impairment.

Methods:

A cross sectional study was carried out from April to October 2006. Translation of the questionnaires by translation and back translation method was carried out first, followed by a pilot study on 30 glaucoma patients using the translated questionnaires. The process of reliability assessment on the questionnaires were done after the pilot study. There were 134 patients selected for the study. Ocular examination was carried out on the patients including the visual acuity assessment using the standard Snellen chart. After completion of the ocular examination, the patients underwent an interview by in person approach using the modified NEI VFQ 25 and utility analysis questionnaire. Lastly, the patients underwent the Esterman binocular visual field test using standard Carl Zeiss Humphrey Perimetry machine.

Results:

Cronbach's α for the modified NEI VFQ 25 was 0.740, indicating moderate internal consistency. The total modified NEI VFQ 25 showed significant positive correlation with Esterman binocular visual field (P<0.001). A significant negative correlation noted between modified NEI VFQ 25 score with LogMAR visual acuity in the better eye (P=0.009) and also with LogMAR visual acuity in the worse eye (P<0.001). Modified NEI VFQ 25 subscale showed higher correlation with the visual acuity in worse eye compared to better eye. Modified NEI VFQ 25 subscale showed low to strong correlation with Esterman binocular visual field. A significant negative correlation was noted between modified utility analysis with LogMAR visual acuity in the better eye (P=0.010) and also with LogMAR visual acuity in the worse eye (P<0.001). A significant positive correlation was noted between modified utility analysis with Esterman binocular visual field (P<0.001).

Conclusion:

The validity and reliability of the modified NEI VFQ 25 were shown to be sufficient. This questionnaire is applicable to the Malay-speaking population as quality of life instrument.A significant correlation noted between modified NEI VFQ 25 with visual field and visual acuity of glaucoma patients. The modified utility analysis also showed significant correlation with visual field and visual acuity of glaucoma patients.

CHAPTER 1:
INTRODUCTION

1. INTRODUCTION

Glaucoma is one of the major causes of visual impairment worldwide. It is ranked as the third cause of visual impairment and blindness. affecting an estimated 5.2 million persons (Thylefors et al, 1994), therefore it is important to know the quality of life of these patients. As the life expectancy of the people's increases and other preventable cause of blindness like cataract and refractive error decline. glaucoma will play a significant role as a cause of permanent visual loss.

Quality of life is an outcome measure which is difficult to quantify by the doctors but for the patients. it is very important. Every patient should be asked about his or her perception on current status and also the difficulties he or she face with daily tasks. Glaucoma affects the daily life of the patients through visual deterioration and its treatment. Glaucoma patients can lose quality of life due to the diagnosis. functional loss. inconvenience of treatment, side effects and cost of the treatment (lester et al. 2002).

Glaucoma not only affect visual function and increased cost of treatment. but it also affect patients' health related quality of life (Shutimaporn et al. 2005). Only minimal information is known about the impact of glaucoma on the quality of life of the patients. More information is needed on the evaluation of patients' capabilities in performing visual tasks and also on the correlation of perceived disabilities with visual function tests.

Health related quality of life is a measure of a person's well being that focuses on the dimensions of physical functioning, social functioning, role functioning, mental health and general health perceptions (Wilson et al, 1995). Glaucoma has a major impact on the health related quality of life. This is because health related quality of life worsened after the diagnosis of the disease due to anxiety of blindness and it can also affects patients in the productive age group (Janz et al, 2001).

Permanent blindness for this group of patients will be a burden not only for their families, but also for their country. Different factors are involved in affecting health related quality of life including complications of the ocular diseases with impaired vision, adverse effects of medications, complication of surgery and cost of treatment. Gutierrez et al (1997) reported that the most potential influence of glaucoma on health related quality of life were visual field loss and effects of treatment.

Quality of life means taking care of patients' health in the broadest sense – his physical, emotional, and spiritual well being. It is important nowadays to know the quality of life of the patients, not only just treating them. Thus the assessment of quality of life for these patients will be an important diagnostic tool in evaluation of the magnitude of the problems (Jampel et al, 2002).

If we do not have a way of validly measuring a patient's quality of life and how it is affected by our treatments, we cannot be sure whether or not we are achieving our goal as physicians that is to restore, maintain, or enhance quality of life.

Initially, objective approaches or the visual function parameter are used as a guide to grossly indicate the quality of life of the patients such as measuring the visual acuity, intraocular pressure, and visual field. All the objectives approaches does not totally reflects or measured the true quality of life of the glaucoma patients and for this reason various generic and vision specific quality of life instruments or questionnaires have been developed and validated.

All these questionnaires are known as health related quality of life measures or instruments. Various studies have been conducted to find the most accurate tools such as using specific questionnaires eg: Visual Function 14 (VF 14), National Eye Institute Visual Function Questionaires (NEI VFQ) and utility analysis to assess the quality of life of the patients.

VF 14 was developed to assess vision related quality of life affected by cataract (Steinberg et al, 1994). It is short, simple and has been shown to have good reproducibility and responsiveness (Cassard et al, 1995). The VF 14 has been shown to have moderate correlation with visual field impairment in glaucoma patients (Parrish et al, 1997). However, it emphasizes activities that are related to visual acuity, which are affected by cataract. Activites affected by visual field such as peripheral vision, that are relevant to glaucoma patients are not evaluated.

National Eye Institute Visual Function Questionaires 25 (NEI VFQ 25) is a vision specific health related quality of life instrument in which its reliability and validity had been established and comparable to other instruments such as NEI VFQ 51 (Mangione

et al, 2001). NEI VFQ 25 has been translated into eight languages and currently being used in seven federally funded research studies that are examining a range of ocular condition. This showed the potentially useful information one might expected to gain with this brief survey. NEI VFQ 25 will enable us to examine the influence of various eye diseases and interventions have on patient's daily functioning and well being or in simple term, the quality of life of the patients.

Utility analysis allows quantitative measurement of the quality of life associated with particular health state (Melissa et al, 2003). The higher the utility value, the better the quality of life associated with health state and the lower the value, the poorer the quality of life. Utility analysis provides a mechanism for making broad comparisons across an array of clinical settings. Thus, utility analysis will produce important data for health care economic analysis and for better allocation of fund among different diseases.

Due to the facts that the quality of life is related to the culture and customs of the daily life for each country, in our study we used a new questionnaires (translated Malay language version) of the original NEI VFQ 25 questionaires and utility analysis in order to assess the quality of life of the glaucoma patients and its relation to visual function impairment.

Studies assessing quality of life and visual function among patients with glaucoma are still lacking in Malaysia. To our knowledge, no previous study documents subjective aspects of quality of life and visual function in patients with glaucoma, nor has any

correlation between quality of life measures and clinical indicator ever been done in this country. For this reason, we have chosen to do this study and with this reliable modified NEI VFQ 25 questionaires and modified utility analysis, we hope it will stimulate further studies regarding quality of life of glaucoma patients in this country. In addition, this modified NEI VFQ 25 can be used as an important vision specific functioning tool in assessing the quality of life of others ocular diseases especially in this region of Asia where Malay language was one of the main spoken language.

CHAPTER 2: BACKGROUND

2.0 BACKGROUND

2.1 GLAUCOMA

2.1.1 Definition

Glaucoma is one of the major causes of visual impairment worldwide. Glaucoma is a group of diseases characterized by progressive loss of retinal ganglion cells, characteristic optic neuropathy associated with visual field loss and the elevated intraocular pressure is a primary risk factor. Glaucoma is a chronic, progressive ocular disease involving optic neuropathy accompanied with visual field loss and blindness.

2.1.2 Classification

Glaucoma can be classified into congenital (developmental) and acquired. Further subclassification into open angle and angle closure types are based on the mechanism in which aqueous outflow is impaired. Glaucoma can also be classified into primary and secondary depending on the presence or absence of associated factors contributing to the pressure rise. In primary glaucoma, the elevation of the intraocular pressure (IOP) is not associated with any other ocular disorder whereas in secondary glaucoma, a recognizable ocular and non ocular disorders alter the aqueous outflow which results in elevation of the IOP.

2.1.3 Risk factors

Risk factors for glaucoma can be divided into ocular and non ocular. The ocular risk factors are intraocular pressure, myopia, increased cup disc ratio, asymmetric cupping, disc haemorrhage and peripapillary atrophy. The non ocular risk factors are age, race, family history, diabetes, hypertension, migraine, gender, alcohol consumption and cigarette smoking. Intraocular pressure is the primary risk factor for glaucoma and it is the only treatable ocular risk factor.

2.1.4 Pathogenesis

Pathogenesis of glaucoma suggests retinal ganglion cell damage. Retinal ganglion cell damage is due to two important causes which is necrosis and apoptosis (programmed cell death). Vascular and mechanical aspect responsible for the necrosis. Vasospastic tendency, nocturnal systemic hypotension, diastolic perfusion pressure, peripapillary ischemia and lower optic nerve blood flow are the vascular causes for necrosis. Mechanical cause is due to high intraocular pressure that damages the optic disc at the lamina cribrosa by disturbing the normal retrograde flow of trophic factors from the axon terminal to the cell body and this will trigger cell death and cause subsequent necrosis.