



LAPORAN AKHIR PROJEK PENYELIDIKAN JANGKA PENDEK

FINAL REPORT OF SHORT TERM RESEARCH PROJECT

Sila kemukakan laporan akhir ini melalui Jawatankuasa Penyelidikan di Pusat Pengajian dan Dekan/Pengarah/Ketua Jabatan kepada Pejabat Penyelidikan

RUJUKAN

1. Nama Ketua Penyelidik: *Dr Bakiah Shahrudin*
Name of Research Leader

Profesor Madya/
Assoc. Prof.

Dr./
Dr.

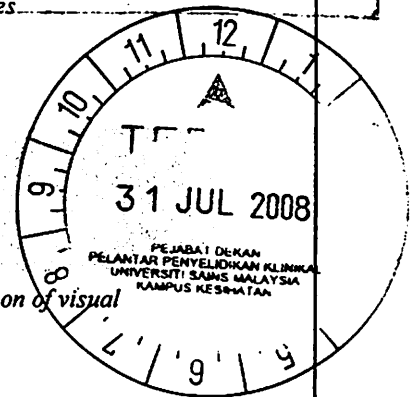
Encik/Puan/Cik
Mr./Mrs/Ms

07 JUL 2008

2. Pusat Tanggungjawab (PTJ): *Department of Ophthalmology, School of Medical Sciences*
School/Department

3. Nama Penyelidik Bersama: *Dr Wan Hazabbah Wan Hitam, Dr Nor Fadzillah Abd Jalil*
Name of Co-Researcher

4. Tajuk Projek: *A study on the capability of Frequency Doubling Perimetry in the detection of visual field abnormalities in primary open angle glaucoma*
Title of Project



5. Ringkasan Penilaian/Summary of Assessment:

Tidak Mencukupi
Inadequate

Boleh Diterima
Acceptable

Sangat Baik
Very Good

1

2

3

4

5

i) Pencapaian objektif projek:
Achievement of project objectives

ii) Kualiti output:
Quality of outputs

iii) Kualiti impak:
Quality of impacts

iv) Pemindahan teknologi/potensi pengkomersialan:
Technology transfer/commercialization potential

v) Kualiti dan usahasama:
Quality and intensity of collaboration

vi) Penilaian kepentingan secara keseluruhan:
Overall assessment of benefits

6. Abstrak Penyelidikan

(Perlu disediakan di antara 100 - 200 perkataan di dalam Bahasa Malaysia dan juga Bahasa Inggeris. Abstrak ini akan dimuatkan dalam Laporan Tahunan Bahagian Penyelidikan & Inovasi sebagai satu cara untuk menyampaikan dapatan projek tuan/puan kepada pihak Universiti & masyarakat luar).

Abstract of Research

(An abstract of between 100 and 200 words must be prepared in Bahasa Malaysia and in English).

This abstract will be included in the Annual Report of the Research and Innovation Section at a later date as a means of presenting the project findings of the researcher/s to the University and the community at large)

Seperti di lampiran

7. Sila sediakan laporan teknikal lengkap yang menerangkan keseluruhan projek ini.

[Sila gunakan kertas berasingan]

Applicant are required to prepare a Comprehensive Technical Report explaining the project.

(This report must be appended separately)

Seperti di lampiran

Senaraikan kata kunci yang mencerminkan penyelidikan anda:

List the key words that reflects your research:

Bahasa Malaysia

Ujian medan penglihatan "Frequency Doubling"
Klassifikasi system FDT SS2
Sensitiviti dan spesifisiti

Bahasa Inggeris

Frequency doubling perimetry
FDT SS2 staging system
Sensitivity and spesifisity

8. Output dan Faedah Projek

Output and Benefits of Project

(a) * Penerbitan Jurnal

Publication of Journals

(Sila nyatakan jenis, tajuk, pengarang/editor, tahun terbitan dan di mana telah diterbitkan/diserahkan)

(State type, title, author/editor, publication year and where it has been published/submitted)

1. Abstract

Title: "A study on the capability of frequency doubling perimetry in the detection of visual field abnormalities in primary open angle glaucoma patients"

Authors: Nor fadzillah AJ, Bakiah S.

Publication: Asian Journal of Ophthalmology 2007; 9 (suppl 1) pg 129

2. Original Article

Title: "Clinical use of FDT SS2 staging system in the detection of visual field abnormalities in primary open angle glaucoma"

Authors: Shaharuddin, Bakiah, Abd Jalil, Nor Fadzillah, Wan Hitam Wan Hazabbah

Publication: Journal of Glaucoma (Submitted)

- (b) **Faedah-faedah lain seperti perkembangan produk, pengkomersialan produk/pendaftaran paten atau impak kepada dasar dan masyarakat.**
State other benefits such as product development, product commercialisation/patent registration or impact on source and society.

Pembentangan kertas di peringkat antarabangsa:

- i. *2007 Asia-ARVO Meeting on research in vision and ophthalmology
Suntec Singapore International Convention Centre
March 2-5, 2007*
- ii. *World Glaucoma Congress
Suntec Singapore International Convention Centre
July 18-21, 2007*
- iii. *23rd Malaysia-Singapore Ophthalmic Congress
June 1-3, 2007*
- iv. *Pembentang jemputan – 1st ASEAN Optometric Conference
Equatorial Hotel, Malacca
April 29 - May 1, 2007*

* Sila berikan salinan/Kindly provide copies

- (c) **Latihan Sumber Manusia**
Training in Human Resources

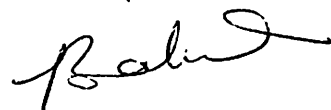
- i) *Pelajar Sarjana: M.Med
Graduates Students
(Perincikan nama, ijazah dan status)
(Provide names, degrees and status)*

*Dr Nor Fad-zillah Abd Jalil – M.Med
(Ophthalmology) – Graduate May 2007*

- ii) *Lain-lain: (2) Optometrists Eye Clinic (HUSM) – handling the FDP machine
Others*

9. **Peralatan yang Telah Dibeli:**
Equipment that has been purchased

Tiada



Tandatangan Penyelidik
Signature of Researcher

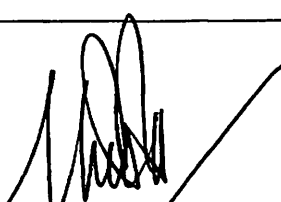
23 Jun 2008

Tarikh
Date

Komen Jawatankuasa Penyelidikan Pusat Pengajian/Pusat
Comments by the Research Committees of Schools/Centres

Projek diselaraskan dgn baik.
Hasil dibentangkan.

Penerbitan sedang di proses.


ASSOC. PROF. MUSTAFFA MUSA
Chairman of Research Committee
School of Medical Sciences
Health Campus
Universiti Sains Malaysia

TANDATANGAN PENGERUSI
JAWATANKUASA PENYELIDIKAN
PUSAT PENGAJIAN/PUSAT
Signature of Chairman
[Research Committee of School/Centre]

29/7/08

Tarikh
Date

1. ABSTRAK (Bahasa Malaysia):

Pengenalan: 'Frequency Doubling Perimetry' (FDP) telah digunakan secara meluas untuk tujuan saringan dan rawatan susulan medan penglihatan bagi pesakit glaukoma. Ianya dikatakan sensitif dalam mengesan kehilangan medan penglihatan di peringkat lebih awal.

Objektif: Untuk menentukan keupayaan FDP di dalam mengesan ketidaknormalan medan penglihatan dikalangan pesakit glaukoma sudut terbuka.

Bentuk Kajian: Prospektif, perbandingan dan kajian rentang.

Metodologi: Seramai 150 pesakit POAG telah menjalani ujian medan penglihatan menggunakan FDP bagi kedua-dua modul saringan dan tahap upaya (threshold) 30-2 dan mesin medan penglihatan Humphrey 30-2 di klinik mata Hospital Universiti Sains Malaysia (HUSM). Kesemua pesakit juga menjalani pemeriksaan oftalmologi Lengkap. Data dianalisa menggunakan SPSS versi 12.0 bagi mengetahui sensitiviti, spesifisiti, kawasan di bawah lengkungan "receiver operating characteristic" (ROC) dan ujian persetujuan diantara FDP dan "Humphrey visual field" (HVF).

Keputusan: Data 120 pesakit POAG telah dianalisa mengikut kriteria inklusi dan eksklusi serta kebolehan guna pakai (reliability) ujian medan penglihatan. Untuk FDP dalam modul saringan, apabila "sekurang-kurangnya satu poin tercicir" digunakan sebagai definisi ketidaknormalan medan penglihatan, apabila dibandingkan dengan HVF sensitiviti yang diperolehi adalah diantara 92.2% hingga 96.2% dan spesifisiti di Antara 24.2% hingga 50.0%. Apabila "2 atau lebih poin" yang tercicir, dijadikan sebagai definisi untuk ketidaknormalan medan penglihatan, sensitiviti yang diperolehi adalah diantara 89.5% hingga 95% dan spesifisiti diantara 33.3% hingga 47.0%. Bagi FDP dalam modul tahap upaya dengan pelbagai definisi yang digunakan untuk ketidaknormalan medan penglihatan, sensitiviti yang diperolehi terletak diantara 83.5% hingga 100% dan spesifisiti pula berada di antara 0.0% hingga 47.0%. Nilai persetujuan kappa di antara FDP dan HVF didapati diantara 0.155 hingga 0.391 iaitu terletak diantara persetujuan yang "poor" hingga "slight".

Kesimpulan : Kajian ini menunjukkan FDP memberi sensitiviti yang tinggi tetapi spesifisiti yang rendah di dalam mengenalpasti ketidaknormalan medan penglihatan di kalangan pesakit POAG. Klasifikasi baru bagi keterukan glaukoma menggunakan 'Glaucoma Scoring System 2 (GSS2) dan 'Frequency Doubling Technology Scoring System 2' (FDT SS2) berupaya memberikan klasifikasi dengan segera dan boleh digunapakai untuk menentukan tahap keterukan glaukoma dan ciri-ciri ketidaknormalan medan penglihatan.

2. ABSTRACT (English):

Introduction: Frequency Doubling Perimetry (FDP) has become a widely used technique for both screening and follow up of glaucomatous field loss. It is thought to be sensitive and superior in the detection of early visual field loss

Objective: To determine the capability of FDP in the detection of visual field abnormalities in the primary open angle glaucoma (POAG) patients.

Design: Prospective, comparative, cross sectional study.

Method: 150 POAG patients underwent both FDP in screening and threshold mode 30-2 and Humphrey Visual Field (HVF) 30-2 tests in Eye clinic Hospital Universiti Sains Malaysia (HUSM). All patients had a comprehensive ophthalmology assessment. Data analysis including sensitivity, specificity, area under the receiver operating characteristic (ROC) curve and kappa agreement between FDP and HVF was performed using SPSS system version 12.0.

Results: Data from 120 POAG patients were analyzed following inclusion, exclusion criteria and reliability of the visual field testing. For FDP in screening mode, when "at least 1 missed point" was used as the definition for abnormal FDP, the sensitivity was high between 92.2% to 96.2% and specificity was between 24.2% to 50.0%. When "2 or more missed points", was used as definition for abnormal visual field, the sensitivity was 89.5% to 95.0% and specificity between 33.3% to 47.0% was achieved. For FDP in threshold mode and HVF with various definitions for abnormal visual field, the sensitivity was between 83.5% to 100% and specificity between 0.0% to 47.0%. Kappa value for FDP and HVF was between 0.155 to 0.391 which showed poor to slight agreement.

Conclusion: FDP showed high sensitivity but low specificity in the detection of visual field abnormalities among our patients. The new classification for severity of glaucoma with Glaucoma Scoring System 2 (GSS2) and Frequency Doubling Technology Scoring System 2 (FDT SS2) was able to provide immediate and reliable classification for both severity and characteristic of visual field.