

**BAHAGIAN PENYELIDIKAN & PEMBANGUNAN  
CANSELORI  
UNIVERSITI SAINS MALAYSIA**

**Laporan Akhir Projek Penyelidikan Jangka Pendek**

1) Nama Penyelidik: Dr. Abdul Rashid B. Abdul Rahman

Nama Penyelidik-Penyelidik  
Lain (Jika berkaitan) : Prof. Madya (Dr) Ismail Yaakob

2) Pusat Pengajian/Pusat/Unit : P.P. Sains Perubatan, Jabatan Farmakologi

3) Tajuk Projek: "Perbezaan Etnik Di Dalam Kesan Hipokalemia  
Di Sebabkan Oleh Beta - 2 Agonist"

- 4) (a) **Penemuan Projek/Abstrak**  
*(Perlu disediakan maklumat di antara 100 - 200 perkataan di dalam Bahasa Malaysia dan Bahasa Inggeris. Ini kemudiannya akan dimuatkan ke dalam Laporan Tahunan Bahagian Penyelidikan & Pembangunan sebagai satu cara untuk menyampaikan dapatan projek/uan kepada pihak Universiti).*

Saya telah mengkaji dua puluh orang wanita sepuluh keturunan Melayu dan sepuluh Cina. Mereka telah di kaji selama dua kali selepas di berikan samaada Terbutaline (5Mg) atau Plasebo. Penemuan yang utama ialah kadar kalium selepas Inhalasi Terbutaline lebih rendah di kalangan keturunan Cina kalau di bandingkan dengan keturunan Melayu. Berbezaan di dapati samada dari sudut purata tahap kalium. Selepas inhalasi mahu pun dari sudut jumlah mereka yang mengalami hipokalemia selepas inhalasi. Penemuan ini mungkin di sebabkan kesensitifan reseptor beta - 2 di kalangan keturunan Cina lebih daripada keturunan Melayu. Ini mempunyai Implikasi Klinikal yang penting kerana kekuatan ubat untuk berlainan kaum yang perlu di Preskripsi oleh doktor untuk kaum-kaum tertentu mungkin berbeza. Perkara ini akan menjadi tumpuan seterusnya penyelidikan saya di masa hadapan.

(b) Senaraikan Kata Kunci yang digunakan di dalam abstrak:

**Bahasa Malaysia**

**Bahasa Inggeris**

Hipokalemia

Hypokalaemia

Beta 2 agonist

Beta 2 agonist

Perbezaan Etnik

Ethnic Differences

4

5) Output Dan Faedah Projek

(a) Penerbitan (termasuk laporan/kertas seminar)

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

Penemuan telah dibentangkan di 'Annual Scientific Meeting

of the Academy of Medicine' Singapore 12 - 13 February 1995.

Kertas kerja sepenuh adalah dalam proses penyediaan.

- (b) Faedah-Faedah Lain Seperti Perkembangan Produk, Prospek Komersialisasi Dan Pendaftaran Paten.

(Jika ada dan jika perlu, sila gunakan kertas berasingan)

Penemuan ini akan membuka tirai bagi saya untuk mengkaji .....  
dengan lebih mendalam kesan-kesan reseptor Beta yang lain. ....  
Saya telah pun menemui seorang pelajar siswazah yang akan .....  
meneruskan kajian ini ke arah mendapat Sarjana Sains Perubatan.

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- (c) Latihan Gunatenaga Manusia

i) Pelajar Siswazah .....  
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ii) Pelajar Prasiswazah: En. Selram Basir seorang teknologis makmal .....  
telah mempelajari teknik-teknik meng'assay' potassium dan .....  
penggunaan alat Dinamap. ....  
.....

iii) Lain-Lain : .....  
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6. Peralatan Yang Telah Dibeli:

1. Aerochamber with mask X 2
2. Bricanyl inhaler 0.25 mg/dose X 5
3. Terumo syringe with needle 2.5 ml 2 box
4. Terumo syringe with needle 5 ml 2 box
5. Cannula / venflon green 40 unit
6. Micropore tape 1/2" 1 unit
7. Blood collection tube plain silicone coated  
glass with cap 5 ml (Box of 100 pcs) 1 box
8. Polypropylene tube with cap 5 ml 1 box
9. Polypropylene tube with cap 10 ml 1 box
10. Test tube cleaner (brush) 1 roll
11. Cotton woll (brush) 1 roll
12. Cotton gauze (brush) 1 roll

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UNTUK KEGUNAAN JAWATANKUASA PENYELIDIKAN UNIVERSITI

16/7/93

**ABSTRACT FORM**

Closing Date: 10 January 1995

For Secretariat Use

S/N \_\_\_\_\_

**ETHNIC DIFFERENCES IN BETA 2 AGONIST INDUCED HYPOKALAEMIA****A.R.A. RAHMAN**<sup>1,2</sup>, **Y. ISMAIL**<sup>2</sup>, **S. BASIR**<sup>3</sup>Department of Pharmacology<sup>1</sup>, Medicine<sup>2</sup> and Chemical Pathology<sup>3</sup>,  
School of Medical Sciences, Hospital University Science Malaysia,  
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Sex differences in hypokalaemic response due to Beta 2 agonist has been previously reported (Rahman et al 1992). There is also reason to believe that ethnic differences also occur in this response.

10 Malays (M) and 10 Chinese (C) female normal volunteers were studied. Mean age (SEM) were M : 22.8 yrs (0.14); C : 23.2 yrs (1.1). Volunteers were studied on two separate occasions. On each visit, volunteers were asked to lie supine before and after inhalation of either 5 mg terbutaline (T) or placebo (P). Inhalation were given via a spacer device. Serum samples for potassium were taken on two occasions prior to inhalation (baseline) and on three occasions after inhalation. The study was performed single blind and randomised.

On the placebo day, serum potassium increased slightly post inhalation but did not reach significance; C : 3.56 mmol/l. (0.11) before and 3.61 mmol/l (0.11) after inhalation, M : 3.80 mmol/L (0.08) before and 3.96 mmol/L (0.08) after inhalation. Following terbutaline, inhalation, serum potassium fell in both groups but was greater in the Chinese; C : 3.74 mmol/l. (0.09) before and 3.54 mmol/l. (0.09) after, M : 3.93 mmol/L (0.09) before and 3.86 mmol/L (0.11) after inhalation. The differences however fail to reach statistical significance. Seven Chinese had a fall in serum K<sup>+</sup> of  $\geq 0.3$  mmol/L compared to five Malay.

In conclusion, Beta 2 agonist induced hypokalaemia is more profound in Chinese than in Malays. This could be due to increase Beta 2 receptor sensitivity in the Chinese.

(do not fold)

be presented by: DR. ABDUL RASHID ABDUL RAHMAN**REGISTRATION FORM**The Secretariat  
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Singapore 0316Name: DR. ABDUL RASHID ABDUL RAHMANAddress: DEPARTMENT OF PHARMACOLOGY, SCHOOL OF MEDICAL  
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KUBANG KERIAN, 16150 KELANTANTel.: (Home) 09- \_\_\_\_\_ (Office) 09-765 1700Fax No: 09-765 3370 I wish to submit a Free Paper entitled ETHNIC DIFFERENCES  
IN BETA 2 AGONIST INDUCED HYPOKALAEMIA

The registration fee of ( / ) Doctor S\$80.00

 Trainee / Medical Officer S\$40.00  
(Proof of appointment must accompany the  
registration form)

in favour of "Academy of Medicine, Singapore" is enclosed.

(Cheque / Bank Draft No: \_\_\_\_\_)

Signature: Date: 5/1/1995

Note: 50% refund of registration fees before 1 January 1995. No refunds will be entertained after 1 January 1995.