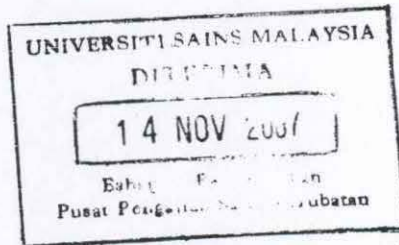


A STUDY OF BACTERIAL VAGINOSIS IN HUSM TOWARDS A STANDARD DIAGNOSTIC METHOD



Dr. AZURA BINTI HUSSIN

**Dissertation Submitted In Partial Fulfillment Of The
Requirement For The Degree Of Master Pathology
(Microbiology)**

**UNIVERSITI SAINS MALAYSIA
2006**

SENARAI SEMAKAN UNTUK BUKU LAPORAN AKHIR GERAN USM JANGKA PENDEK

| | |
|-----------------------|--|
| NAMA PENYELIDIK UTAMA | : DR. ADIBAH IBRAHIM |
| NAMA CO-RESEARCHER | : DR. SITI SURAIYA MD. NOOR/ DR. FAUZIAH MOHD. IDRIS |
| TAJUK GERAN | A study of Bacterial Vaginosis in HUSM- Towards a Standard Diagnostic Method |
| NO.AKAUN | 304/PPSP/6131386 |

SENARAI SEMAKAN SEMASA PENYERAHAN BUKU LAPORAN AKHIR
(Sila Tandakan (4) Pada Kotak Yang Berkenaan)

| NO. | PERKARA | ADA | TIADA |
|-----|--|-----|-------|
| 1. | Borang Laporan Akhir Projek Penyelidikan USM Jangka Pendek | / | |
| 2. | Borang Laporan Hasil Penyelidikan, PPSP | / | |
| 3. | Salinan Menuskrip | / | |
| 4. | Penyata Perbealangan (Financial Statement) | / | |
| 5. | Laporan Komprehensif (termasuk kertas persidangan atau seminar dan penerbitan saintifik hasil daripada projek ini) | / | |
| 6. | Surat pemakluman penghantaran Laporan Akhir ke Bhg. Penyelidikan | / | |

Nota: * No. 1-5 - Perlu dimasukkan dalam Buku Laporan Akhir

* No.6 - Hantar terus Kepada Pn. Che Merah Ismail (RCMO) hanya salinan kepada Bhg. R&D, PPSP

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 Pelantar Penyelidikan

1. **Nama Ketua Penyelidik:** **DR. ADIBAH IBRAHIM**
Name of Research Leader

Profesor Madya/
Assoc. Prof.

Dr./
Dr.

Encik/Puan/Cik
Mr/Mrs/Ms

2. **Pusat Tanggungjawab (PTJ):** **PUSAT PENGAJIAN SAINS PERUBATAN**
School/Department

3. **Nama Penyelidik Bersama:** **DR. SITI SURAIYA MD. NOOR/ DR. FAUZIAH MOHD. IDRIS**
Name of Co-Researcher

4. **Tajuk Projek:**
Title of Project

A Study of Bacterial Vaginosis in HUSM- Towards a Standard Diagnostic Method

5. **Ringkasan Penilaian/Summary of Assessment:**

| | Tidak Mencukupi <i>Inadequate</i> | | Boleh Diterima <i>Acceptable</i> | Sangat Baik <i>Very Good</i> | |
|--|--------------------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| | 1 | 2 | | 3 | 4 |
| i) Pencapaian objektif projek: <i>Achievement of project objectives</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii) Kualiti output: <i>Quality of outputs</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii) Kualiti impak: <i>Quality of impacts</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iv) Pemindahan teknologi/potensi pengkomersialan: <i>Technology transfer/commercialization potential</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| v) Kualiti dan usahasama : <i>Quality and intensity of collaboration</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| vi) Penilaian kepentingan secara keseluruhan: <i>Overall assessment of benefits</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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)

ABSTRACT (ENGLISH):

Introduction: The diagnosis of Bacterial Vaginosis (BV) is commonly established by using the Amsel's criteria, which is based mainly on clinical presentation. However, BV was often under diagnosed when the clinical criteria are used because of its inherent subjectivity. A more objective method like the Nugent's criteria is more reliable especially in asymptomatic patients. This study is performed to study the prevalence of BV among pregnant women in HUSM and to evaluate its accuracy comparing to the standard Amsel's criteria. **Methodology:** A cross sectional study was randomly conducted among pregnant women, attending Obstetric and Gynaecology Clinic in HUSM for six months duration. The prevalence of BV was determined by the Amsel's and Nugent's criteria. The agreement of the two criteria was observed and the validity of the Nugent's criteria was evaluated using the Amsel's criteria as gold standard. **Results:** 270 patients were recruited into the study. The prevalence of bacterial vaginosis using the Amsel's criteria was 1.0 % (95% CI) and 2.6% (95% CI) by Nugent's criteria. The sensitivity, specificity, positive predictive value and negative predictive value of the Nugent's criteria, using the Amsel's criteria as gold standard was 100%, 98.5%, 42.9% and 100%, respectively, with moderate agreement between the two criteria ($k=0.594$ and $p<0.001$). **Conclusion:** The prevalence of BV among pregnant women in HUSM by using the Amsel's criteria is slightly lower (1.0%) compared to the Nugent's criteria (2.6%). Both criteria could be used to diagnose BV, however Nugent's criteria is more standardized, objective and simple to perform, thus more suitable especially for research purpose.

ABSTRAK (BAHASA MALAYSIA)

Pendahuluan: Diagnosis Bakteria Vaginosis (BV) dibuat berdasarkan kriteria Amsel yang berpandukan manifestasi klinikal. Insiden penyakit ini didapati jauh lebih rendah berbanding insiden sebenar kerana ketidakupayaan membuat diagnosis di kalangan mereka yang tidak mempunyai simptom. Penggunaan Nugent criteria mungkin boleh mengatasi masalah tersebut. Kajian ini dibuat untuk mendapatkan prevalen BV di kalangan ibu mengandung di HUSM dan membuat perbandingan keberkesanan diagnosis BV menggunakan kriteria Nugent dan Amsel. **Kaedah:** Ia merupakan kajian cross sectional secara rawak di kalangan ibu mengandung di Klinik Ibu, HUSM, selama 6 bulan. Swab vagina kesemua pesakit diambil dan diteliti untuk diagnosis BV menggunakan kedua-dua kriteria, dan perbandingan keduanya dibuat. **Keputusan:** 270 pesakit telah mengambil bahagian di dalam kajian ini. Prevalen BV di kalangan ibu mengandung di HUSM didapati sebanyak 1.0% (95% CI) menggunakan kriteria Amsel dan 2.6% (95% CI) menggunakan kriteria Nugent. Kriteria Nugent didapati 100% sensitive, 98.5% specific, 42.9% positive predictive value dan 100% negative predictive value ($k=0.594$ dan $p < 0.001$). **Kesimpulan:** Kedua-dua kriteria boleh digunakan untuk diagnosis BV, tetapi kriteria Nugent lebih sesuai digunakan untuk kajian kerana ia lebih standard, objektif dan mudah dilakukan.

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)

Senaraikan kata kunci yang mencerminkan penyelidikan anda:

List the key words that reflects your research:

Bahasa Malaysia

Bakteria Vaginosis
Diagnosa
Kriteria Nugent

Bahasa Inggeris

Bacterial Vaginosis
Diagnosis
Nugent's criteria

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. Dissertation submitted in Partial Fulfillment of the requirements for the degree of Master of Pathology (Microbiology)
2. Presentation:
Azura H, Adibah I, Fauziah I, Rosliza AR, Siti Suraiya MN. Study of demographic factors in Kelantanese Pregnant Women with Bacterial Vaginosis. 2nd National Conference on Infectious Diseases: Immunocompromised Host: Challenges in Management, on 14- 15 February 2007 at Grand Reverview Hotel, Kota Bharu, Kelantan

Azura H, Adibah I, Fauziah I, Rosliza AR, Siti Suraiya MN. Evaluation of the Nugent's Criteria and the Amsel's Criteria in the Diagnosis of Bacterial Vaginosis. Presented at School of Medical Sciences, Kubang Kerian, Kelantan in 2006
3. Publication:
In the process for publication in Singapore Medical Journal.

Dr Adibah Ibrahim

From: em.singaporemedj.0.6e3ad.157f5631@editorialmanager.com on behalf of Singapore Medical Journal [smj@sma.org.sg]
Sent: Tuesday, November 13, 2007 10:32 AM
To: dradibah@kck.usm.my
Subject: Submission Confirmation for A Study of bacterial vaginosis in HUSM towards a standard diagnostic method .

Dear Dr Ibrahim,

Your submission entitled "A Study of bacterial vaginosis in HUSM towards a standard diagnostic method ." has been received by the Singapore Medical Journal.

You will be able to check on the progress of your paper by logging on to Editorial Manager as an author. The URL is <http://singaporemedj.edmgr.com/>.

Username: A Ibrahim-578
Your password is: ibrahim425

Your manuscript will be given a reference number once an Editor has been assigned.

Thank you for submitting your work to this journal.

Kind regards,

Editorial Office
Singapore Medical Journal

- (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).

NIL

* Sila berikan salinan/Kindly provide copies

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

- i) **Pelajar Sarjana:**
Graduates Students
(Perincian nama, ijazah dan status)
(Provide names, degrees and status)

Dr. Azura Husin, MD, Master of Pathology (Microbiology), completed the course and was graduated in June 2007

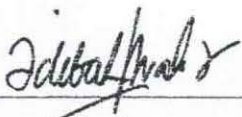
- ii) **Lain-lain:**
Others

NIL

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

1. *Gloves*
2. *High vaginal swab sticks*
3. *pH paper strip*
4. *Gram stain solution*
5. *Glass slides*
6. *Pottasium hydroxide solution*

(Details of the expenses is as attached)


Tandatangan Penyelidik
Signature of Researcher

DR. ADIBAH IBRAHIM
Penyarah / Pensyarah
Jabatan O & G
FACULTY OF MEDICINE
UNIVERSITI SAINS MALAYSIA
11200 KUBANG KERIAN, KEPANG

11 November 2007


Tarikh
Date

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

* Mohon spd penyediaan
name jurnal yg. telah dihantar
manuskrip & apakah
statusnya.

* Method peralatan yg. dibeli, jika
ada.

Laporan akhir ok


ASSOC. PROF. M. STAFFA MUSA
Chairman of Research Committee
School of Medical Sciences
Health Campus

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

19/2/08

Tarikh
Date

BORANG LAPORAN HASIL PENYELIDIKAN
PPSP

Tajuk geran: **A Study of Bacterial Vaginosis in HUSM- Towards a Standard Diagnostic Method**

Penyelidik: **Dr. Adibah Ibrahim, Dr. Azura Hussin, Dr. Fauziah Mohd. Idris, Dr. Suraiya Md. Noor**

Jenis geran: **Geran Jangka Pendek**

Tempoh geran: **2 tahun (1 Jun 2005 hingga 31 Mei 2007)**

Jenis laporan: Laporan Kemajuan Alatan di beli Ya:nyatakan.....

Laporan Akhir*: Tidak

| OBJEKTIF SPESIFIK KAJIAN (sama spt dalam proposal asal) | SECARA RINGKAS TERANGKAN PENCAPAIAN/HASIL | OBJEKTIF TERCAPAI ATAU TIDAK |
|--|--|---|
| 1. To study the prevalence of BV among pregnant women in HUSM using Nugent's criteria | The prevalence of BV in HUSM using Nugent's criteria was 2.6% (95% CI), comparing to its prevalence of 1.0% (95% CI) using Amsel's criteria. | Objective of the study was fully achieved |
| 2. To evaluate the effectiveness or accuracy of gram stained method (Nugent's criteria) with currently practice method (Amsel's criteria) in diagnosing BV | The sensitivity, specificity, positive predictive value and negative predictive value using Nugent's criteria in diagnosing BV (using Amsel's criteria as the gold standard) was noted to be 100%, 98.5%, 42.9% and 100% respectively. There was a moderate agreement between the Amsel's and Nugent's criteria ($k= 0.594$ and $p= < 0.001$) in diagnosing BV. In conclusion, both Nugent's and Amsel's criteria could be used to diagnose BV. In view of its high sensitivity and specificity, together with the way the test is performed which is more standardized, objective and simple, it is recommended that Nugent's criteria to be used for the diagnosis of BV. | Objective was achieved. |
| 3. | | |
| 4. | | |

- Laporan Akhir perlu disertakan salinan manuskrip dan surat yang dihantar kepada mana-mana jurnal untuk penerbitan.

Nama Penyelidik Utama (PI): **DR. ADIBAH IBRAHIM**
Tarikh: 11 November 2007

t.t.:

Adibah Ibrahim

DR. ADIBAH IBRAHIM
No. 77, Jalan
Taman, 50450
Kuala Lumpur, Malaysia
Tel: 03-2062 2222, 03-2062 2223

**SALINAN
MANUSKRIP**

A Study of bacterial vaginosis in HUSM towards a standard diagnostic method

Adibah I.

Dr. Adibah Ibrahim(MD, M.Med (O&G))
Department of Obstetrics and Gynaecology
School of Medical Sciences
Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan,
Malaysia.

Azura H

Dr. Azura Husin (MD, Master of Pathology(Microbiology))
Department of Microbiology
School of Medical Sciences
Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan,
Malaysia.

Nor Aliza AG

Dr. Nor Aliza Abdul Ghaffar (MBBS, M.Med(O&G))
Department of Obstetrics and Gynaecology
School of Medical Sciences
Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan,
Malaysia.

Fauziah M.I

Dr. Fauziah Mohd. Idris (MBBS, Master of Pathology(Microbiology))
Department of Microbiology
School of Medical Sciences
Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan,
Malaysia.

Correspondence:

Dr. Adibah Ibrahim(MD, M.Med (O&G))
Department of Obstetrics and Gynaecology
School of Medical Sciences
Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan,
Malaysia.
Tel: +609 7663320
Fax: +609 7653370
E-mail: dradibah@kck.usm.my

A Study of bacterial vaginosis in HUSM towards a standard diagnostic method

ABSTRACT

Introduction. Bacterial vaginosis is a common cause of vaginitis, causing many complications to the mother and foetus. The diagnosis of Bacterial Vaginosis is commonly established by using clinical presentation and microbiological tests. However, because of its inherent subjectivity it is often misdiagnosed. A more objective method like the Nugent's criteria is more reliable especially in evaluating asymptomatic population. The aims of this study are to determine the prevalence of bacterial vaginosis among pregnant women, using Amsel's and Nugent's criteria, to compare the agreement between the two criteria and to determine the validity of the Nugent's criteria to diagnose Bacterial Vaginosis.

Methodology. A randomised cross sectional study was conducted among pregnant women for six months. High vaginal swabs were performed to test for pH, Amine's test, clue cells and gram stains. The prevalence of bacterial vaginosis using both Amsell's and Nugent's criteria was determined, together with the analysis for the agreement between the two test and the sensitivity and specificity of Nugent's test.

Results: Among the 270 patients recruited, only 1.0% were noted to have bacterial vaginosis using Amsell's criteria and 2.6% using Nugent's criteria. There was a moderate agreement between the Amsel's and Nugent's criteria ($k = 0.594$ and $p = <0.001$) in diagnosing Bacterial Vaginosis. Nugent's criteria was 100% sensitive, 98.5% specific, with positive and negative predictive values of 42.9% and 100% respectively.