

GROUP B STREPTOCOCCUS SURVIVALS



KOLTON ~ UK SEBASTIAN ~ AUST NEVAEH ~ US JACOB ~ US JENNA ~ US CAMERON ~ US ROMAN ~ AUST

THE DAYS WE SPENT IN NICU...

GARDNERELLA
BACTERIAL VAGINOSIS
GROUP B STREPTOCOCCUS
CANDIDA ALBICAN
TRICHOMONAS

CE IVDD
RV002

SURVIVALS WITH CHALLENGES



SEAN ~ UK LILIAN ~ US EMERSYN ~ US ALLISON ~ US ERIN ~ US
NON FUNCTIONING RIGHT ARM MENINGITIS LOSS OF HEARING RETARDED ORAL MOTOR APRAXIA

THOSE WHO LEFT US... WE WILL ALWAYS MISS YOU!

EVEN A SMALL PREVENTION OF PREMATURED BIRTH
LEADS TO LARGE MONETARY SAVINGS
DECREASE IN NEONATAL MORBIDITY & MORTALITY 3



**LOOK AT ME..
I'M CUTE LITTLE
FLUER**

**MY FAMILY MISSES FLUER
TO HAVING LATE ONSET GBS**

KNOWING...

**GBS ~ the bacteria that causes the infection can be found in about 25 per cent of all healthy adult vaginas, rectums, and intestines.
American Pregnancy Association**

PREGNANT MOTHER NOT TESTED FOR GBS

DOCTORS HAVE TO WAIT FOR LAB TEST RESULTS FOR 3 - 5 DAYS

RESULTING TO GIVING EMPIRICAL TREATMENT OF ANTIBIOTICS

OUR BABY DOCTOR KNOWS

OUR BRAIN CELLS ARE STILL MATURING...

OUR LITTLE LUNGS ARE YET TO BE FULLY DEVELOP!

EFFECTS ON MISUSED OF EMPIRICAL ANTIBIOTICS

SEPTICEMIA

MENINGITIS

PULMONARY HYPERTENSION

SEIZURES

PNEUMONIA

ASTHMA

**FARLEY ET AL.
...FOUND THAT GBS.. THE INCREASED RISK WAS HIGHEST AMONG YOUNGER ADULTS COMPARED WITH PERSONS OF THE SAME AGE WITHOUT DIABETES MELLITUS. ¹**

- HIGHER PREVALENCE OF GBS AMONGST PATIENT HAVING**
- DIABETES MELLITUS**
- PREVIOUS STROKE**
- DECUBITUS ULCER**
- CIRRHOSIS**
- BREAST CANCER**
- NEUROGENIC BLADDER**

**DIABETIC MELLITUS PATIENTS HAVE 14 TIMES THE RISK OF HAVING INVASIVE GBS DISEASE COMPARED WITH OTHER ADULTS
SCHWARTZ ²**

¹ A population-based assessment of invasive disease due to Group B streptococcus in Non-Pregnant Adults. N Engl J Med. 1993;328:1807-1811. Farley M M, Harvey R C, Stull T, Smith J D, Schuchat A, Wenger J D, Stephens D S.

² Invasive group B streptococcal disease in adults: a population-based study in metropolitan Atlanta. JAMA. 1991;266:1112-1114. Schwartz B, Schuchat A, Oxtoby M J, Cochi S L, Hightower A, Broome C V.

³ Epidemiology of group B streptococcal disease: risk factors, prevention strategies and vaccine development. Epidemiology Rev.1994;16:374-402. Schuchat A, Wenger J D.

**POINT OF CARE
REQUIRED**

**MORE GBS
SCREENING**



U KINGDOM

**AMONGST THE
HIGHEST GBS**



AMERICA

**POINT OF CARE
REQUIRED**

**GBS UNDER
RESEARCH**



RUSSIA

**NO
TO EMPIRICAL
ANTIBIOTICS**



SAUDI ARABIA

**AMONGST THE
HIGHEST GBS**



INDONESIA

**GBS AT
LARGE**



CHINA

**NO
TO EMPIRICAL
ANTIBIOTICS**



MALAYSIA

**GBS
MANAGABLE**



GERMANY

**GBS OUTBREAK
2015**



SINGAPORE

**GBS
MANAGABLE**



JAPAN



**AUSTRALIA
GBS DECLINING**

**GBS
MANAGABLE**



KOREA

**POINT OF CARE
REQUIRED**

**POINT OF CARE
REQUIRED**



..RATE OF GBS DISEASE is DECLINING IN AUSTRALIA.... believed to be DUE TO PREVENTIVE SCREENING & USE OF ANTIBIOTICS WHEN REQUIRED. 1



POINT OF CARE SCREENING WITH IMMEDIATE TEST RESULTS WOULD BE IDEAL + ENCOURAGED

DISCOURAGE EMPIRICAL ANTIBIOTICS

ENCOURAGE ADEQUATE ANTIBODY LEVELS

GBS RESISTANCE 2

ERTHROMYCIN	12.8%
CLINDAMYCIN	9.0%
OFLOXACIN	19.4%
LEVOFLOXACIN	18.4%
TETRACYCLINE	46.5%

SEROTYPE III

ERYTHROMYCIN	39.3%
CLINDAMYCIN	12.8%

SEROTYPE Ib ISOLATES

OFLOXACIN	91.4%
LEVOFLOXACIN	91.45%

An **Infant's Susceptibility** to GBS is Increased when the **Level of Anti-Capsular Antibody** to the **Infecting Serotype** is **Low**, as is the case when the **Maternal Antibody Level** is **Low**, as well as when infants born to mothers with adequate antibody levels are **Born Before 34 Weeks Gestation**, since **Transplacental Transport of Immunoglobulin G** is **Reduced Early in Gestation**. The **Inoculum of GBS** to which the **Baby is Exposed** can be **Large** either because **Maternal Colonization** is particularly **Dense** or because **Obstetric Complications Develop** which **Permit Multiplication of the Bacteria at the Time of Labor**. 3

1 Streptococcal Infection – Group B betterhealth.vic.gov.au
 2 Characterization of Group B Streptococcus Isolated from Women in Saitama City, Japan Hiroyuki Ueno, Yoshihiko Yamamoto, Akiko Yamamichi, Koji Kikuchi, Sumie Kobori & Motonobu Miyazaki. Japan. J. Infect. Dis., 65, 516-521, 2012
 3 Epidemiology of Group B Streptococcal Disease in the United States: Shifting Paradigms. Anne Schuchat American Society of Microbiology ~ Clinical Microbiology Reviews DOI: 10.1128/CMR.11.3.497

VENUS G90 TEST

ION MOBILITY SPECTROMETRY



**BIOMS GMBH
BREMEN GERMANY**

90 SEC DIAGNOSIS

ONE SIMPLE SWAP

BACTERIAL VAGINOSIS

TRICHOMONAS

CANDIDA ALBICANS

GROUP B STREPTOCOCCUS

VALIDATION

The Diagnostic Procedure (IMS) shows high accuracy and is technically simple and rapid. The trimethylamine level becomes an index of severity of the infection.

PROF KARPAS

NON INVASIVE

**IMMEDIATE
PATIENT REPORT**

POINT OF CARE

CURRENT STATUS

**NO MORE EMPIRICAL
ANTIBIOTICS WITH
IMMEDIATE RESULTS**

SPECIFICITY ~ 95.5%

SENSITIVITY ~ 98.9%

ACCURACY ~ 94.4%

... test the validity of using an ion mobility spectrometer (IMS) to measure the abundance of three biogenic amines ~ trimethylamine, putrescine and cadaverine in a sample of vaginal discharge fluid in order to derive a diagnosis for the presence of BV.

THE IMS analyses were in **Excellent Agreement** with the AMSEL Test Results with 1 False negative, giving of **95.5%** (when 2 Trichomoniasis cases are included). The **Specificity** of the IMS analysis was **98.9%** with 1 false positive out of 93 cases.

JACK D SOBEL ~ USA



Venus G-IMS is accurate and feasible for **Point-of-Care Testing of BV in the Ambulatory Care** setting... with **83 % Sensitivity and 92 % Specificity** at a cut-off of AUC TMA /AUC Total..

T BLANKENSTEIN

IMS confirmed 21 (true positive BV) samples with 1 false negative (21/22, sensitivity=95.5%)

PROF WALTER CHAIM



ION MOBILITY SPECTROMETRY (IMS) is proven technology upon which VENUS G-Test is based on the detecting the **MOBILITY RATE of VERY LOW SPECIFIC COMPOUNDS CONCENTRATION** under the **INFLUENCE** of an **ELECTRIC** field. IMS has used Historically for Toxic Chemicals, Illicit Drugs and Explosives.

BioMS has introduced IMS for the **POINT OF CARE** in **CLINICAL DIAGNOSTIC ARENA**.



Clamersdorfer Str. 4,
28757 Bremen Germany
Tel +49 (0) 421 69667478
Fax +49 (0) 751 37068975

**BIOMS GMBH
BREMEN GERMANY**

Molecular Science
Mobile +49 177 811 0008
info@bioms-diagno.de
www.bioms-diagno.de



**BIOMS ASIA PACIFIC
MELBOURNE AUSTRALIA**
admin@bioms-asiapacific.com

**ISO 9001 : 2008
DIRECTIVE 98/79/EC**

**ISO 13485 : 2003
DIRECTIVE 98/79/EC**

Diagnosing vaginal infections through measurement of biogenic amines by ion mobility spectrometry.

Jack D. Sobel a, Zeev Karpas, Avraham Lorber, Harper Uni Hosp, Inf Dis Div, Wayne State Uni Sch of Med, MI, USA

Point of Care (POC) Dia of Bacterial Vaginosis (BV) using Venus G Test ION MOBILITY SPECTROMETRY (IMS) in a Routine Ambulatory Care Gyn Clinic
T Blankenstein, Simon Lytton, B Leidi, E Atweh, K Friese, Joannis Mylonas

New Technology for Diagnosis of Bacterial Vaginosis, Euro J of Obs & Gyn and Rep Bio 111(1) : 83-7 · Dec 2003 [Chaim W Karpas Z](#), [Lorber A](#).