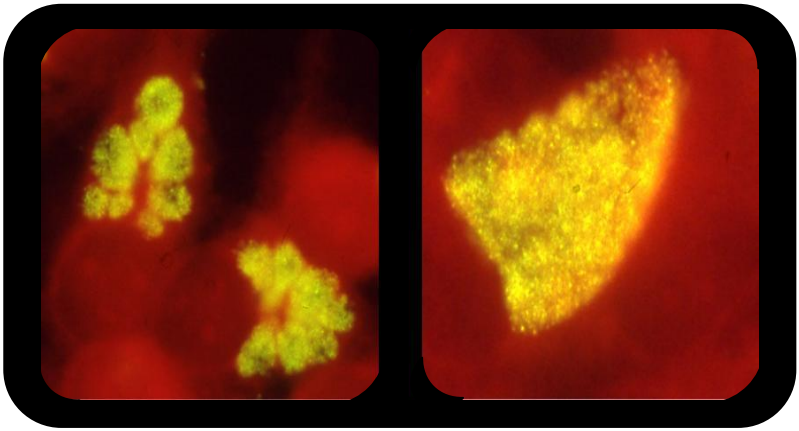
7th AACM

Seventh Annual Amsterdam

Chlamydia Meeting



Hotel Mercure Amsterdam aan de Amstel

17 December 2010
9.30 – 17.45

Preface

Welcome: this year we organize our Annual Amsterdam *Chlamydia* Meeting (AACM) for the seventh time, and we included, like the last two years, all *Chlamydiae* species.

The symposium will be opened by Dr. Ingrid van de Broek informing us on the largest CT screening study ever performed in the Netherlands, the *Chlamydia* screening Initiative (CSI). In addition we have many senior and junior speakers including 4 foreign speakers and 5 PhD students and in total 18 speakers the most ever in the AACM series. We are confident that the speakers will spark the minds of both young as well as established Chlamydiologists and trigger valuable discussions this day!

The Laboratory of Immunogenetics: it was established by Emeritus Prof. A. Salvador Peña in 1992, and has become part of the Department of Pathology in 2005 (Prof. Chris J.L.M. Meijer). The Laboratory links fundamental scientific research and clinical applications (translational research). Research is divided into two interactive and productive lines: chronic inflammatory diseases (J.B.A. Crusius, PhD) and infectious diseases (S.A. Morré, PhD; from Jan 1st, 2008, Head of the Laboratory of Immunogenetics).

Studies in twins and adopted children have shown that host genetic factors form an important element in the susceptibility to and the severity of infectious diseases such as *Chlamydia trachomatis*, *C. pneumonia*, and *C. psittaci* infections in humans. Bacterial, environmental, and host genetic factors determine the clinical course of *Chlamydiae* infections and an integrated multi-disciplinary approach is used to study these factors.

Acknowledgements: We would like to thank our main sponsor, Roche Diagnostics, without their support this meeting would not be possible in current format. We would also like to thank the other sponsors and those involved in the organization of this meeting. We like to express our gratitude to Thomson-Reuters and Prous Science (Barcelona, Spain) for the continuous support and for their contribution to make the publication of the 1st and 2nd proceedings possible in a special supplement of the journal “Drugs of Today” in 2006 and 2009.

Dr. Servaas A. Morré
Head of the Laboratory of
Immunogenetics

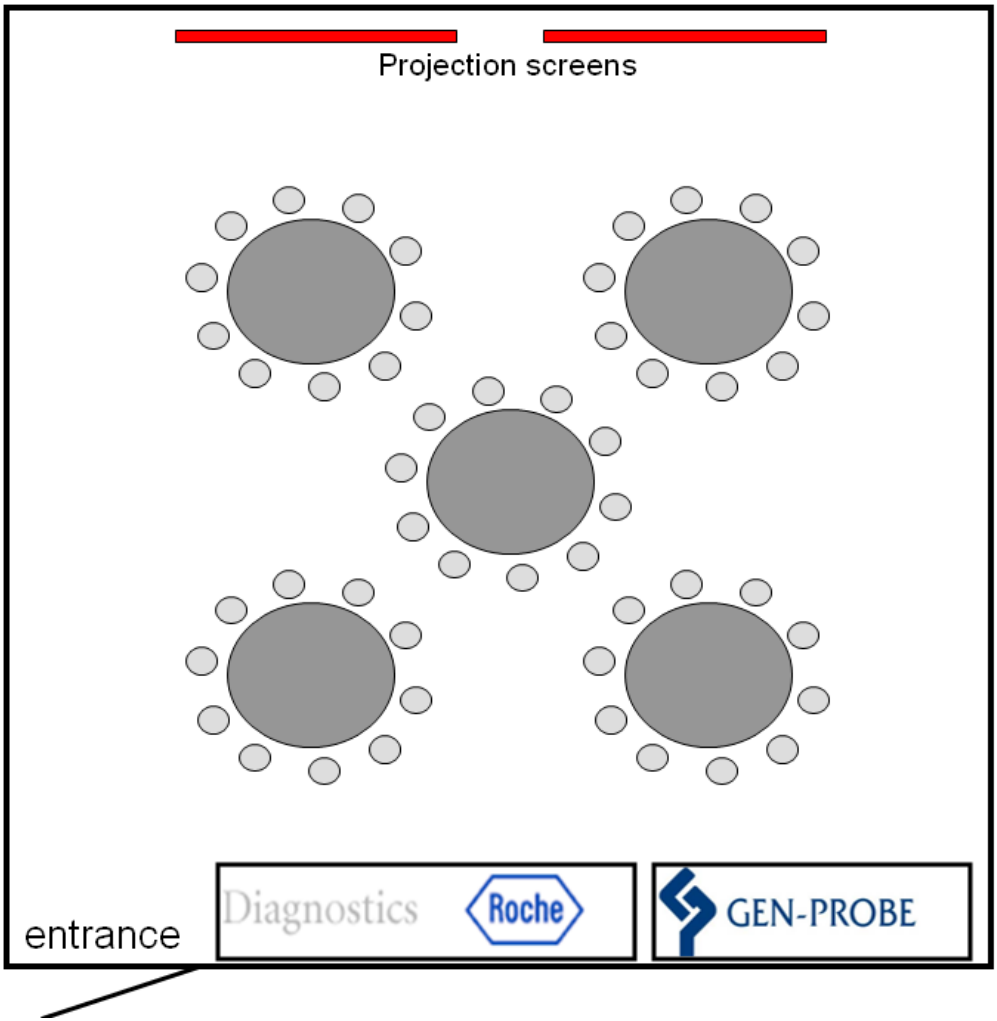
Dr. Sander Ouburg
Senior Postdoc
Infectious Diseases

Laboratory of Immunogenetics, Dept. Pathology, VUmc, Amsterdam, The Netherlands

Cover photographs: Immunofluorescence staining of *Chlamydia trachomatis* within epithelial cells. HeLa cells were infected with a clinical isolate and stained with a monoclonal antibody specific for the major outer membrane protein (OmpA) of *C. trachomatis*. The left panel shows a nonfusogenic phenotype, while the right panel shows a fusogenic phenotype. Images courtesy of Yvonne Pannekoek, Department of Medical Microbiology, Academic Medical Center, Amsterdam, The Netherlands.

Amsterdam, 17 December 2010

Floor plan (1st Floor, rooms 1+2)



Programme

9.00 – 9.30 **Registration to the symposium (1st floor, Foyer outside Rooms 1-2)**

9.30 – 9.40 Opening: Dr. Servaas Morré

9.40 – 11.10 *Chlamydia* infections

9.40 CSI, represented by Dr. Ingrid van den Broek (NL)
Evaluation of the selective, systematic internet-based Chlamydia Screening Implementation in the Netherlands

10.05 Dr. Caroline Bax (NL)
C. trachomatis serovar tissue tropism in urogenital vs. rectal sites

10.20 Drs. Stephan Verweij (NL)
First case of a woman infected with the MSM LGV L2b strain

10.35 Dr. Antoine Beerens (NL)
Detection and spread of new variant C. trachomatis in European countries

10.50 Drs. Laura van Dommelen (NL)
C. trachomatis diagnostics

11.05 – 11.30 **Coffee Break (In front of the meeting room)**

11.30 – 12.45 *Chlamydiae*

11.30 Prof. dr. dr. hc. Gerry M. Doorestein (NL)
Chlamydia in a zoo

11.45 Prof. dr. Daisy Vanrompay (BE)
Ovotransferrin, a natural anti-microbial protein against Chlamydophila psittaci in poultry: from the lab to the farm

12.00 Dr. Arie van der Ende (NL)
Multi Locus Sequence Typing of Chlamydia reveals an association between Chlamydia psittaci genotypes and host species

12.15 Dr. Sylvia Bruisten (NL)
Evaluation of high resolution typing methods of Chlamydia trachomatis

Amsterdam, 17 December 2010

Programme

12.30 Dr. Dana Hrubá (CZ)
Chlamydial infection in keratoconjunctivitis sicca

12.45 – 13.45 **Lunch (In font of the meeting room)**

13.45 – 14.30 *Pregnancy and Infertility*

13.45 Dr. Monica Christianson (SE)
Screening men for Chlamydia trachomatis and HIV during pregnancy: what do men say about it?

14.00 Drs. Monique Pereboom (NL)
Chlamydia screening in pregnant women

14.15 Drs. Ouafae Karimi (NL)
The CXCR5-NKT cell axis in Chlamydia trachomatis genital infection: an integrated approach using murine modeling and human immunogenetics

14.30 – 16.30 *Chlamydia trachomatis*

14.30 Dr. Katelijn Schautteet (BE)
Evaluation of a MOMP-based DNA vaccine against C. trachomatis serovar E infection in a pig model

14.45 Drs. Esmée Lanjouw (NL)
European guideline for the management of Chlamydia trachomatis infections

15.00 – 15.30 **Coffee break (In front of the meeting room)**

Chlamydia trachomatis (continued)

15.30 Drs. Mauricio Morales (MX)
Chlamydia trachomatis in Mexico

15.45 Drs. Jannie van der Helm (NL)
Chlamydia trachomatis in Surinam

16.00 Dr. Hannelore Götz (NL)
Chlamydia trachomatis infections – challenges in case management

16.15 – 16.20 **Closing remarks**

16.20 – 17.45 **Drinks (Foyer, lobby level)**

Ingrid van den Broek, PhD

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Curriculum Vitae

Ingrid van den Broek (1969) has worked as an epidemiologist at the Center for Infectious Disease Control of the RIVM since 2006. She has been involved in the evaluation of the *Chlamydia* Screening Implementation from the start of the programme. She also worked on other research topics within the field of control and surveillance of STI's in the Netherlands, specifically aimed at monitoring the development of STI care in the general practice.
Before 2006, her research focussed on malaria control. She coordinated several studies on the effectiveness of antimalarial therapy in field projects of 'Medecins sans Frontieres', *i.e.* in Myanmar, Bangladesh, India, Sudan, DRC and Congo, which played an important role in changing national guidelines towards artesunate-based therapies, as well as studies on the usefullness of rapid tests to diagnose malaria in DRC and Colombia. Her interest in malaria had started after graduating as a biologist in 1993 and spending a year in Burkina Faso working in a WHO bednet-programme. In 1999 she completed her PhD at the University of Groningen, in a more experimental biological setting (Dept. Animal Physiology), on the role of the olfactory system of the malaria mosquito *Anopheles gambiae*.

Abstract

The prevalence of *Chlamydia* was estimated in the Netherlands in 2003 at 2.1% among young people of 15-29 years; the number of infections diagnosed annually has risen since then with increased testing and no decline in positivity rates. Therefore, on the advice of the Health Council, the *Chlamydia* Screening Implementation (CSI) was set-up. CSI is designed as an annual selective, systematic, Internet-based, screening programme, with a stepped-wedge, risk-stratified cluster-randomized roll-out to enable the evaluation process. CSI started in 2008 and has now completed the planned evaluation period (two full screening rounds and a representative part of the third round). In the presentation the main preliminary findings of the evaluation will be discussed.
From April 2008, *Chlamydia* Screening was offered to all municipal-registered 16-29 year olds in Amsterdam, Rotterdam and part of South Limburg. Sexually active persons were asked to participate by requesting a testkit online, returning a

sample to the laboratory and checking their results via their personal login to the CSI-website.
CSI had sent about 630,000 invitations for screening at the time of evaluation. In the first round, participation rates were lower (16%) than expected and declined in the two following screening rounds (to 11% and 8% respectively). More than 80,000 persons were tested. Positivity rates were 4.2% in the first round, which also decreased gradually in the following rounds (to 4.0% and 3.5%). There were significant differences between gender, age groups and by region. Participation was lower in specific high-risk groups, such as people younger than 20 years, with low education, non-Dutch background, or living in deprived areas, but also in lower-risk groups such as persons with longstanding relationships or no reported history of STI or symptoms.
Participants were enthusiastic about the set-up of the screening and communication via the Internet. The majority of non responders replying to a non-response questionnaire (participation 15%) reported that they had made an informed choice for nonparticipation, and often had a lower-risk status.
Altogether, 3735 persons tested positive; of the 40% who replied to online questions after being tested Ct-positive more than 90% indicated to have received treatment. Of people with current and/or past relationships, 80% said their current partner was also treated and 70% notified ex-partner(s), 12% making use of anonymous notification via the CSI-website. Persons who tested Ct-positive automatically received follow-up tests after 6 months, of whom two thirds participated and 10% tested positive again.
Further results on the effectiveness of the screening will be discussed at the meeting, including some results of the modelling of *Chlamydia* prevalence and cost effectiveness estimates. With relatively low and declining participation rates, it is not yet clear if the CSI programme will reach sufficient leverage to decrease the Ct population prevalence significantly in the intervention regions in the longterm.

CSI-group: Jan van Bergen[1,2], Elfi Brouwers[3], Han Fennema[4], Hannelore Götz[5], Christian Hoebe[3], Rik Koekenbier[4], Lydia Pars[2], Sander van Ravesteijn[5].
RIVM evaluation team: Eline LM Op de Coul[1], Ingrid van den Broek[1], Katie Greenland[1], Gerda Doornbos[1], Boris Schmid[1], Mirjam Kretzschmar[1], Eelco Over[6], Ardine de Wit[6],

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[2] STI AIDS Netherlands, Amsterdam
[3] Department of Infectious Diseases, South Limburg Public Health Service, Geleen
[4] Cluster of Infectious Diseases, Department of Research, Amsterdam Health Service, Amsterdam
[5] Division of Infectious Disease Control, Rotterdam Rijnmond Public Health Service, Rotterdam
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Caroline J. Bax, MD, PhD

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Curriculum Vitae

Caroline Bax studied Medicine at Leiden University. She finished her residency in Obstetrics and Gynaecology in 2007 (MC Haaglanden, The Hague and LUMC, Leiden). During her training she started research on Chlamydia trachomatis infections (clinical characteristics, serology and serovar studies), which resulted in her PhD thesis in October 2010. Since 2009 she does a fellowship perinatology at the AMC in Amsterdam.

Abstract

Objectives

The aims of the current study were to determine the incidence of concurrent infections on a serovar level, to determine the incidence of multiple anatomical infected sites on detection and genotyping level, and analysis of site specific serovar distribution, to identify tissue tropism in urogenital *vs*. rectal specimens.

Methods

Chlamydia trachomatis (CT) infected patients in two populations were analysed in this study: 75 patients visiting the outpatient department of Obstetrics and Gynaecology of the MC Haaglanden and 358 patients visiting the outpatient STD clinic, The Hague, the Netherlands. The PACE 2 assay (Gen-Probe) was used for detection of CT from urethral, cervical, vaginal, oropharyngeal, and anorectal swabs. CT genotyping was determined on all CT positive samples, using the CT-DT genotyping assay.

Results

Samples of 433 patients (256 female and 177 male) with confirmed CT infection were analysed. In 11 patients (2.6%) concurrent serovars in one anatomical sample site were present. In 62 (34.1%) female and four (9.3%) male patients multiple sample site infections were found. A considerable percentage of women tested on the cervical/vaginal and rectal site were found positive on both sites (36.1%, 22 out of 61). In men, D/Da and G/Ga serovars were more prevalent in rectal than urogenital specimens (p= 0.0081 and p=0.0033, respectively) while serovar E was more prevalent in urogenital specimens (p=0.0012).

Conclusions

The prevalence of multiple serovar infections is relative low. Significant differences in serovar distribution are found in rectal specimens of men with serovar G/Ga as the most prominent, suggesting tissue tropism.

Stephan P. Verweij, BSc

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Curriculum vitae

Stephan Verweij, born on June 22nd 1988, is a master student biomedical sciences at the VU University Amsterdam. During his master internship at the department of pathology, laboratory immunogenetics, he worked with *Chlamydia trachomatis* (CT). He developed an L2b specific primer/probe set, this manuscript is submitted to Clinical Microbiology and Infections. He also continued his research to relations between serovars and serological responses. In June 2010 he presented these findings at the International Symposium for Human *Chlamydial* Infections in Austria during a poster presentation. In October 2009, he participated in the EpiGen*Chlamydia* Training Challenge at the Oxford University. Currently, he is finishing his master's degree and is working at the laboratory of immunogenetics of the VU medical center on serological response studies in patients having CT.

Abstract

Lymphogranuloma venereum (LGV) is caused by *Chlamydia trachomatis* serovars L1-L3. In 2005, we identified a unique single-nucleotide mutation in the *omp*A gene of the LGV L2 serovar circulating among men having sex with men (MSM). This serovariant was designated L2b. Subsequently we developed a specific LGV real-time PCR exploiting a unique deletion (36bp) in all LGV serovars within the polymorphic membrane protein H (pmpH) gene. In our laboratory we get frequent epidemiology-based requests to identify the etiologic LGV serovar as L2b variant. But to identify the L2b mutation in the variable segment 2 of the *omp*A gene, we have to amplify and sequence this fragment, which is not as sensitive as PCR, time-consuming, expensive, and needs sophisticated equipment. Therefore, we developed an L2b-specific primer/probe set using fast and reliable real-time PCR techniques. One request of a hospital in the Netherlands concerned a female patient with symptoms similar to LGV pathology. We discovered this patient had the L2b strain; we found the first female with LGV.

Amsterdam, 17 December 2010

Antoine M.J. Beerens, PhD

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Curriculum Vitae

Dr Beerens (born March 23, 1977) studied Biology at Wageningen University, specializing in molecular biology. He obtained his PhD in 2006. His thesis examined possible uses of modified Adenovirusses in gene therapy for cancer. Since 2008 he is employed as molecular biologist at the Groningen based Laboratory for infectious diseases, where his focus is on virus and STD diagnosis.

Abstract

A new variant of *C. trachomatis* (CT) was first described in Sweden in October 2006. The nvCT carries a deletion of 377bp within the chlamydial plasmid coding sequence 1. This area of the plasmid has been used as the target for several commercial tests, which made it possible for this strain to spread through the population undetected and go untreated.

New tests have now been developed that detect both nvCT and wtCT and a significant lesson in this process was to introduce a second or dual target for detection. Thus nvCT infections are now detected and treated on an equal basis to wtCT, this has afforded the opportunity to study the spread of a new strain within the population in the absence of selection by absence of treatment.

The study was performed retrospectively on specimens found positive for CT during routine testing. Samples were collected in Sweden from the Malmö area (Skane county) and Halmstad (Halland county), in Denmark from Copenhagen and in The Netherlands from the provinces of Groningen and Drenthe. Apart from being CT positive they were 'unselected' and represented a range of samples from both males and females of different ages and included different sample types *e.g.* urines, cervical and vaginal swabs. Additionally, samples selected for risk factors were included from the city of Amsterdam.

Testing for CT and nvCT was performed using the automated standard procedure for the Abbott RealTime CT Dual Color assay.

Our data shows that nvCT now represents approx 13 - 14% of all CT cases across Sweden, it is not yet clear whether these figures represent the new equilibrium for nvCT in the Swedish population. nvCT has not yet spread in significant numbers to near neighbour Denmark and only one case has been detected in the Netherlands during the course of this study.

The work was supported by Abbott Molecular.

Amsterdam, 17 December 2010

Laura van Dommelen, MD

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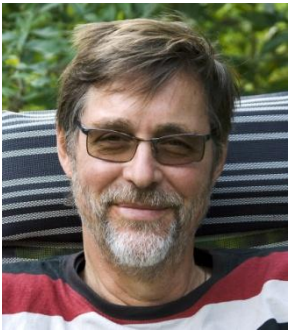
Curriculum vitae

Laura van Dommelen graduated in Medicine in 2005 at the University of Maastricht. She started her training as consultant in Medical Microbiology at the Maastricht University Medical Centre and finished in July 2010. Currently, she is working as medical-microbiologist at the PAMM Laboratory for Medical Microbiology. Her interest in sexually transmitted infections started by a research project on syphilis serology. She subsequently started a thesis project on STI testing and will focus on *Chlamydia trachomatis* detection in different sample types in this presentation.

Abstract

Objective *Chlamydia trachomatis* (CT) detection in both self obtained vaginal swabs (SVS) and first-catch urine (FCU) in two separate assays, results in the highest sensitivity. In most laboratories however, one-sample testing is performed for reasons of cost efficiency. To further improve one-sample testing, we assessed the laboratory performance of three different testing approaches to find the most sensitive one-sample test procedure: SVS versus FCU versus a combined specimen of FCU/SVS.
Design All women visiting a STD clinic above the age of 16 were asked to participate in the study. Each client was asked to take a FCU and a SVS with a dual swab. The FCU, SVS and FCU/SVS combination were tested for CT by Strand Displacement Amplification assay (SDA) of Becton Dickinson (ProbeTec ET system, Maryland, USA) or Polymerase Chain Reaction (PCR) by Roche Diagnostics Inc. (Cobas Amplicor system, California, USA). Clients with at least one out of three sample types (SVS, FCU, SVS/FCU combination) tested positive for CT by NAAT, were regarded as CT positive (comparison standard).
Results In total 791 females were included and CT prevalence was 12% (96/791). The CT detection rate for SVS, FCU and SVS/FCU combination were 94%, 90% and 94%, respectively, if results of NAAT by SDA and by PCR were analyzed together. The detection rate was not significantly different between any of the sample types, when tested solely. Discordance in NAAT results within the different sample types was found in 16 out of 96 CT positive results.

Conclusions Our results show that the detection rate of SVS/FCU combination is equal to that of FCU or SVS alone. SVS is an acceptable and feasible specimen for females. Moreover, SVS is the most cost-effective sample type for a STD clinic population We can therefore conclude that SVS is the specimen of choice to detect CT in females.



Prof. Gerry M. Dorrestein, DVM, PhD, DVP

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Curriculum vitae

Prof dr Gerry M. Dorrestein is veterinary pathologist and the director of the Dutch Research Institute for Avian and Exotic Animals (NOIVBD) and the head of its diagnostic pathology laboratory. Prior to 2006, dr Dorrestein worked as a veterinary pathologist at the University of Utrecht, The Netherlands for 30 years. For the last 15 years of his tenure at the university, he also served as the head of the Avian, Exotic Animal and Wildlife section.
Dr. Dorrestein is a professor of avian and reptile pathology at the University in Leipzig, Germany, and at the University of Veterinary and Pharmaceutical Sciences in Brno, Czech Republic. Dr. Dorrestein is also an honorary professor at the Uludag University of Bursa, Turkey.
Prof Dorrestein is a honorary member of the European College of Avian Medicine (ECAMS), in the board of the European Association of Zoo- and Wildlife Veterinarians (EAZWV), and the author and editor of several books related to avian and exotic animal medicine. He has published over 400 scientific and veterinary papers, and he is also a well-known national and international speaker on topics related to the pathology and medicine of pet birds, zoo animals, and wildlife.

Abstract

In a group of 52 African black-footed penguins (*Spheniscus demersus*) in a zoo there was a higher mortality than normal. Between December 2008 and July 2009 more than 13 birds died and several were sick. Some of them were diagnosed with aspergillosis and a treatment with itraconazole was started. However, more penguins died in a short time but many of them were in a acceptable body condition without an infection of *Aspergillus*. At necropsy these birds had hepato- and splenomegaly with histologically some necrosis, periportal and focal round cellular till mixed cellular infiltrates. Most of these had a fibrino-purulent airsaculitis and a mild carrhale pneumonia.
Some birds were positive for herpesvirus by PCR and an IFT for *Chlamydia psittaci* was possible positive.

A PCR for *Chlamydia* was negative compared to the band of the positive control (261-262), but showed 2 bands (267-271) close to the positive *Chlamydia* control. However, a confirmation with culture or PCR in a specialized laboratory was not possible.
Based on this information a treatment with doxycyclin injections was started with successful results. However, due to the immunosuppressive effect of doxycyclin the problems with *Aspergillus* infections increased. In October 2009, when the treatment with doxycyclin was stopped, only 21 penguins were left and 5 of these were sick. In November the decision was made to euthanize the remaining few pinguins because too many became ill without doxycyclin or suffered from aspergilloses during treatment with doxycyclin.
The diagnosis Chlamydiosis is never completely confirmed.
An outbreak at a zoo in the USA in a *Spheniscus* penguin species revealed that *C. psittaci* can be an important penguin pathogen (Freeland Dunker, pers. comm.). However, this case has never been published.

Prof. Daisy Vanrompay, PhD

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Curriculum vitae

Daisy Vanrompay is Professor of Immunology and Animal cell Biotechnology at the faculty of Bioscience Engineering at Ghent University in Belgium. She is also guest Professor at the Catholic University of Leuven (KULeuven, Belgium). The Belgian Government recognizes here BSL3 laboratory as human psittacosis diagnostic reference laboratory.
She has been studying *Chlamydophila* (*Chlamydia*) *psittaci* infections in birds and humans since 1990 when she was a Veterinary student. In 1994, she wrote here PhD on: “Avian *Chlamydia psittaci* strains and their pathogenicity for turkeys”. Along the way, she was focusing on diagnosis, epidemiology, bacterium host cell interactions, immune responses and vaccine development. In 2005, she also developed a pig animal model for studying *Chlamydia trachomatis* genital infections.

Abstract

Chlamydophila (*Cp.*) *psittaci* respiratory infections are highly prevalent in turkeys and the economical and public health importance of these infections has been recognized since 1950. As there are no vaccines, antibiotic treatment is mostly needed to allow marketing of poultry. In this study, we explored the use of ovotransferrin (ovoTF), a natural anti-microbial protein, against chlamydiosis. OvoTF is the avian homologue of lactoferrin.
In vitro results demonstrated a direct bactericidal effect of ovoTF on extracellular *Cp. psittaci* as well as a significant inhibition of chlamydial entry in chicken macrophages (HD11) by blocking the host cell actin polymerization at the bacterial entry site.
In a following step, we evaluated the effect of ovoTF in a pre-clinical trial in specific pathogen free turkeys. Turkeys were treated with different ovoTF aerosol doses and administrations regimes prior to the experimental (aerosol) *Cp. psittaci* (106 TCID50) infection. Birds were monitored during twelve subsequent days. A single dose of 10 mg ovoTF and a repeated (for 12 days) daily dose of 5 mg ovoTF significantly reduced clinical signs, pathology, bacterial excretion and replication in tissues.

Next, ovoTF was administered on a turkey broiler farm during two subsequent clinical trials. The influence on *Cp. psittaci* infection outbreaks as well as on concurrent infections such as *Ornithobacterium rhinotracheale* (ORT) and the avian metapneumovirus (aMPV) was examined. During the first clinical trial, turkeys received a daily ovoTF aerosol dose of 5 mg per animal, starting at the age of 2 weeks until week 3,5. Aerosol administration was performed by use of an Atomist 1026 spraying device. During the second clinical trial, ovoTF was administered from week 2 until 3,5 and also from week 8 until week 9,5. During clinical trial 1, turkeys were protected against respiratory disease until week 9. No antibiotics were needed until then. At that time, turkeys experienced a *Cp. psittaci* and ORT infection. During clinical trial 2, ovoTF administration significantly improved the health of the turkeys and no antibiotic treatment was needed. Bioaerosol monitoring for *Cp. psittaci* showed a positive effect on the infection pressure. Bioaerosol monitoring was performed using the MAS-100 EcoTM Air Sampler and our in-house developed collection medium ChlamyTrap. *Cp. psittaci*, ORT and aMPV infections still occurred but they were less virulent and passed without clinical manifestations.

Arie van der Ende, PhD

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Curriculum vitae

Arie van der Ende received his doctoral diploma at the University of Groningen where he studied Chemistry with specialization Biochemistry. He graduated in Utrecht (1983) in Molecular Genetics at the Institute of Molecular Biology on the DNA replication of bacteriophage Øx174. From 1983 to 1985 he was a post-doctoral fellow at the laboratory of Arthur Kornberg, Department of Biochemistry, Medical School, Stanford University at which he worked on the in vitro DNA replication of *E. coli*. From 1985 to 1992 he held a position at the Department of Cell Biology and worked on transcellular transport in epithelial cells. Since 1992 he is appointed as Associate Professor at the Department of Medical Microbiology. His main interests are the pathogenesis and molecular epidemiology of bacterial meningitis, in particular that of meningococcal and pneumococcal meningitis. Since 2006, he is head of the Netherlands Reference Laboratory for Bacterial Meningitis.

Abstract

Chlamydia comprises a group of obligate intracellular bacterial parasites responsible for a variety of diseases in humans and animals, including several zoonoses. *Chlamydia trachomatis* causes diseases such as trachoma, urogenital infection, and lymphogranuloma venereum with severe morbidity. *Chlamydia pneumoniae* is a common cause of community-acquired respiratory tract infections. *Chlamydia psittaci*, causing zoonotic pneumonia in humans, is usually hosted by birds, while *Chlamydia abortus*, causing abortion and fetal death in mammals, including humans, is mainly hosted by goats and sheep. We used multi-locus sequence typing to asses the population structure of *Chlamydia*. In total, 132 *Chlamydia* isolates were analyzed, including 60 *C. trachomatis*, 18 *C. pneumoniae*, 16 *C. abortus*, 34 *C. psittaci*, and one of each of *C. pecorum*, *C. caviae*, *C. muridarum*, and *C. felis*. Cluster analyses utilizing the Neighbour-Joining algorithm with the maximum composite likelihood model of concatenated sequences of 7 housekeeping fragments showed that *C. psittaci* 84/2334 isolated from a parrot grouped together with the *C. abortus* isolates from goats and sheep.

Cluster analyses of the individual alleles showed that in all instances *C. psittaci* 84/2334 formed one group with *C. abortus*. Moving 84/2334 from the *C. psittaci* group to the *C. abortus* group resulted in a significant increase in the number of fixed differences and elimination of the number of shared mutations between C*. psittaci* and *C. abortus*. *C. psittaci* M56 from a muskrat branched separately from the main group of *C. psittaci* isolates. *C. psittaci* genotypes appeared to be associated with host species. The phylogentic tree of *C. psittaci* did not follow that of its host bird species, suggesting host species jumps. In conclusion, we report for the first time an association between *C. psittaci* genotypes with host species. (MLST scheme at the *Chlamydiales* MLST website at http://pubmlst.org/chlamydiales/).

Sylvia Bruisten, PhD

Dept. of molecular diagnostics at the Public Health laboratory of the Municipal Health Service (GGD) Amsterdam, the Netherlands

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Curriculum vitae

Sylvia Bruisten is a medical molecular microbiologist. She is currently employed as the head of the department of molecular diagnostics at the Public Health laboratory of the Municipal Health Service (GGD) Amsterdam, the Netherlands. She is also supervisor of several PhD students who perform molecular epidemiological studies on hepatitis viruses (HAV, HBV and HCV) and also on several sexually transmitted bacteria such as *Chlamydia trachomatis*.
Sylvia studied Biology/Biochemistry in Nijmegen after which she started her PhD project on 'the regulation of Complement genes in the mouse' at the Netherlands Cancer Institute in Amsterdam at the Department of Immuno-Genetics supervised by Prof dr. P. Borst. After completing her thesis in 1989, she worked as a molecular biologist at the CLB (now called 'Sanquin'). She participated in coöperative studies with the Academic Medical Center and the GGD Amsterdam, on the Amsterdam Cohort studies, that all involved the early detection of HIV-1 sequences in blood and blood products.
She is currently a member of several boards of committees (BBC-MMO, CK, CTB) and working groups (NWKV, WMDI) of the Dutch Microbiology organisation, NVMM. She was the chair organiser of a European Virology congress in 2009 at the VU Medical center.

Abstract

Introduction: We aimed to compare conventional *omp*A typing of *Chlamydia trachomatis* (CT) with multilocus sequence typing (MLST) and multilocus variable number tandem repeat (VNTR) analysis (MLVA).
Methods: Previously used MLST and MLVA systems were compared to modified versions that used shorter target regions and nested PCR. Heterosexual couples were selected from persons with urogenital CT infections visiting the sexually transmitted infection (STI) outpatient clinic in Amsterdam, the Netherlands. We identified 30 couples with a total of 65 CT positive samples. MLST and MLVA were performed on extracted DNA for eight regions.
Results: All regions were successfully sequenced in 52 samples, resulting in a complete profile for 18 couples and 12 individuals. Nine *omp*A genotypes were

found: D, E, F, G_{var1}, G_{var2}, H, Ia, Ja, and K. Many more MLST profiles (20, *Discriminatory index* (*D*)=0.95) and MLVA profiles (21, *D*=0.96) were obtained and a combination of MLST and MLVA yielded 28 profiles (*D*=0.99). Partners shared identical profiles in seventeen couples, while partners of one couple had different profiles. Three persons had multiple infected anatomical locations and within one individual profiles were identical.

Conclusion: No genotype variation was found within the same person or in couples with putative single transmissions, confirming supposed linkage. The discriminatory capacity by the modified MLST and MLVA methods is significantly higher than *omp*A genotyping (*D*=0.78). This shows that *Chlamydia trachomatis* in clinical specimens has adequate polymorphisms to enable epidemiological cluster analysis. The modified CT typing techniques are very promising for molecular epidemiological studies.

Dana Hrubá, MD

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Curriculum vitae

Dana Hrubá was born in Prague, the Czech Republic in 1960. She graduated at Charles University, Faculty of Medicine and Hygiene in Prague in 1987. After finishing school she started to work for the National Institute of Public Health in the National Reference Laboratory for *chlamydiae*, between 1992 - 2004 she was the head of the laboratory. During this period she organized two National *Chlamydial* Conferences with international participation (in 2001 and in 2003, both in Brno, the Czech Republic). She passed 1st and 2nd specialisation examination in medical microbiology (in 1997 and 2005). The focus of her work lies in diagnostics and epidemiology of *chlamydial* infections and solving the project "Importance of *Chlamydia pneumoniae* in pathogenesis of man´s chronic diseases".

Since February 2005 she has been working as a doctor - diagnostician with specialized qualification for VIDIA-DIAGNOSTIKA s. r. o. laboratory with major in *chlamydial* and respiration infections. Currently she cooperates on a project of *Chlamydial* infection in keratoconjunctivitis sicca.

Abstract

Even though one of the first isolates of *Chlamydophila pneumoniae* (*C. pneumoniae*) was from the conjunctiva, participation of this agent on the eye diseases is still not clear.

Keratoconjunctivitis sicca (KCS) is presented by lacrimal gland involvement, which changes tear quality and tear production. Reason for it is lymfoproliferative remodelling of lacrimal gland. KCS can be an independent disease or is associated with Sjögren syndrome. According to the WHO 6% of the adult population suffers form symptoms of dry eye. Etiology of Sjögren syndrome is thought to be viral – especially in association with *Ebstein- Barr virus*, *cytomegalovirus*, *parotitis virus*, and some *enteroviruses*. Our previous work results in findings, that reason for Chronic Follicular Conjunctivitis and subsequent KCS can be infection by *C. pneumoniae*.

The aim of this project was to evaluate serological findings of *chlamydiae* infection in patients with Chronic Follicular Conjunctivitis associated with KCS.

The results were compared with results from control group of healthy persons. Another aim of this study was to evaluate the benefit of different diagnostic methods (such as serology, *Chlamydial* antigens detection, *Chlamydial* DNA detection) used to detect mentioned infection.
31 patient with Follicular Conjunctivitis were examined. In 11 of them laboratory findings resulted in antibiotic treatment. In this group of patients control laboratory examination was performed after 3-6 month. Evaluation of clinical effect of antibiotic therapy is not finished yet.
The control group was made of 100 healthy persons without any signs of acute or chronic inflammatory disease. 31% of persons had no antibodies to C. pneumoniae. Anamnestic antibodies to *C. pneumoniae* were detected in 35%, IgA or/and IgM anti- *C. pneumoniae* or/and anti-*Chlamydia* antibodies positivity was detected in 34% of persons. Almost half of the persons in the control group (45%) had borderline to strong positivity to antibodies to cHSP60. It is obvious, that evaluation of serological findings in association to clinical picture has to be done with high precaution. Form the serological overview performed in the Czech Republic in the 1996 is obvious, that anamnestic antibodies to *C. pneumoniae* have 70-80% of adult population. This makes interpretation of serological findings rather difficult. Serological findings have to be correlated with clinical appearance and sometimes add direct examination of pathological agent using for example PCR method.

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Curriculum vitae

Monica Christianson is born in Sweden and has a University degree in Nursing 1978 in Gävle, Sweden, and a University degree in Midwifery Stockholm, Sweden 1986. She has a Master in Public Health 1999 Umeå University. She has a Ph.D. in Family Medicine and The National Graduate School of Gender Studies 2007 Umeå University. Thesis: What's behind sexual risk taking? Exploring the experiences of *Chlamydia*-positive, HIV-positive and HIV-tested young women and men in Sweden. She has a Post doc position during 2009-2011 at Umeå Centre for Gender studies Umeå University. This position includes 80% research and 20% teaching and administrative duties. She teaches at advanced level and is course coordinator for Gender, Sex, Bodies - Theories and debates, and is teaching at Midwifery, Nursing, and Medical School- at Umeå University in Sweden, and is supervising students on master levels. She is currently a research leader for "Expectant fathers' perceptions of screening for HIV and *Chlamydia* during pregnancy", and in collaboration with another researcher, is doing research about "Unhealthy hymen practices in the name of tradition and culture". During 2005-2009 she was one of the editors at Jordemodern ("Earth mother") - a national journal for midwives, and was responsible for four special feature issues. Moreover she has a clinical position as a midwife at a youth clinic in Umeå, Sweden, with focus on sexual health.

Abstract

Background: Testing for sexual transmitted infections, such as *Chlamydia* and HIV, reach women to a much higher degree than men through antenatal clinics, making screening during pregnancy both a "woman problem" and a prioritizing of women's sexual health. In so doing, men's reproductive health problems are ignored. This situation has severe health consequences not only for men, but also for women and the unborn child. As the sexual partner of the pregnant woman and the expectant father of their child, these men are in a unique and vulnerable situation where his behaviour on social and biological grounds will affect the health of this "triad", father-mother-child.

Amsterdam, 17 December 2010

Purpose: This project explores how to prevent transmission of HIV and *Chlamydia* from a gender perspective. The plan is to explore whether screening of men during pregnancy may be an innovative way to reach men, to increase detection, and to avoid the present gendered responsibility.
Material and method: Twenty becoming fathers, between the ages 18-34 were recruited from one antenatal clinic in Sweden. As the pregnant women's partners they were offered *Chlamydia* and HIV testing during the pregnancy. Those who agreed to be become tested were interviewed about their experiences, and those who refrained from testing were also interviewed.
Preliminary results: The preliminary analysis shows that these men were mostly positive towards testing men for *Chlamydia* and HIV during pregnancy. Few were aware of how these infections can affect the child during pregnancy. Some men perceived testing to be an integrity offence.
Discussion: From a gender perspective, to implement how to involve both sexes in sexual/reproductive health is a central task in public health. Knowledge from this research can improve both women's and men's health, as well as the unborn child's health. Also, there has been less attention from health care providers to emphasize the reproductive biology of men.
Conclusions: Screening with a focus on women excludes the sexual health needs of men. This knowledge can contribute to decreased sexual transmitted infections, influencing the attitudes among health care providers positively and inspire to a changed policy in primary care.

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Curriculum vitae

Monique Pereboom was born on March 20th 1982 in Vinkega (The Netherlands). After finishing her Bachelor in Nursing in 2006 at the Hanzehogeschool Groningen, she studied Health Sciences - Infectious Diseases at the VU University in Amsterdam. She accomplished her master thesis in Guinea Bissau - West Africa (Bandim Health Project) where she investigated the risk factors for measles hospitality en mortality. In April 2009 she started her work as a junior researcher at the Department of Midwifery Science.
Her PhD project is about infectious diseases in pregnancy and the role of the primary care midwife. A part of her PhD project is about the prevalence and the selective screening methods of Chlamydia trachomatis in pregnant women. This PhD project is part of the national study "DELIVER; Data Primary Care Midwifery", (www.deliver-studie.nl).

Abstract

Chlamydia trachomatis (CT) in pregnancy can result in adverse pregnancy outcomes, as miscarriage, preterm rupture of membranes, and preterm labour, and in neonatal morbidity as low birth weight. However, CT in pregnancy can also be vertically transmitted. Up to 75% of the infants delivered vaginally from a with CT infected mother, acquire CT at some anatomic site.
Currently, screening pregnant women for CT infection is obligatory in Germany. The USA, Australia, and Canada highly recommend screening all pregnant women aged 24 or younger, as well as older pregnant women who are at an increased risk for CT infection. European countries such as Czech Republic, Estonia, Germany, Portugal, Finland, Slovak Republic, and Sweden also recommend screening for *Chlamydia* in the antenatal care.
Although screening for some sexually transmitted diseases is already included in the antenatal health care settings in the Netherlands, pregnant women are not routinely screened for CT infection and at this moment reconsideration about including screening for CT infection in the antenatal setting is still under debate. However, besides screening all pregnant women, an option would be to screen only women who are at high risk for CT infection. In addition to age, other risk

factors might be living in urban areas, ethnical background, new sexual partner in the last three months, unplanned pregnancy and number of life-time sexual contacts.
The objective of this study is to assess the prevalence of *Chlamydia trachomatis* infection among a group of pregnant women who are less than 30 years of age and live in high urban areas in the Netherlands. Secondary aims are to determine the positive and negative predictive value of other risk factors for CT infection. Furthermore, information will be gained about the knowledge, awareness and possible screening barriers of *Chlamydia trachomatis* among primary care midwives in the Netherlands.
Data-collection of this study hasn't started yet and in this current presentation we will discuss this research-protocol.

Ouafae Karimi, MD

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Curriculum vitae

Ouafae Karimi graduated in Medicine at the VU University in Amsterdam and started het specialization in Internal Medicine in 2009. She is very much interested in infectious diseases. Currently, she is finishing her PhD thesis on immunogenetics of inflammatory bowel diseases and infectious diseases of the genital tract with *Chlamydia trachomatis* as focus for this presentation.

Abstract

Background. Immune suppression is critical for controlling inflammatory responses and disruption of this process can lead to tissue damage and impairment of organ function.

Methods. We examined the bacterial load, number of lymphocytes, cytokine production, and fibrosis in the UGT tissues of mice lacking the chemokine receptor, CXCR5 following *Chlamydia muridarum* genital infection. We also assessed the effect of single nucleotide polymorphisms (SNPs) in *Chlamydia trachomatis* infected women attending a subfertility clinic.

Results. *CXCR5*-/- mice showed increased numbers of Th1 cells and fibrosis in the UGT but the course of infection was not altered. However, these mice were unable to control production of multiple cytokines including IFNγ during infection. Mice lacking *CXCR5* had increased numbers of activated (CD69+) NKT cells which correlated to the increased cytokine production. Examination of three SNPs in the *CXCR5* gene revealed that women who developed CT infection or tubal pathology after CT infection had a decrease in *CXCR5* SNP frequency (p=0.002; OR: 7,2; CI:2,0-25,9).

Conclusions. Analysis of *Chlamydia* genital infection in mice and humans identified the *CXCR5* gene in the regulation of upper tract pathology. The relevance to human *chlamydial* infection is potentially important for therapeutics which prevent tubal pathology and infertility.

Amsterdam, 17 December 2010

Katelijn Schautteet, PhD

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Curriculum vitae

Katelijn Schautteet was born on July 7th 1982 in Eeklo, Belgium. In 2000 she started her studies at Ghent University where she obtained the diploma of Master in the Biotechnology in 2005. After her studies, she worked as lab technician in two biotechnology companies, Devgen and Innogenetics. In 2006, she started her PhD at Ghent University in the lab of Immunology and Biotechnology of the Animal Cell. In 2010, she obtained her PhD grade with the study 'Epidemiological Research on *Chlamydiaceae* in Pigs and Evaluation of a *Chlamydia trachomatis* DNA Vaccine'. Since November 2010, she is working as a post doctoral fellow in the lab where she obtained her PhD.

Abstract

Chlamydia trachomatis is a bacterial pathogen that is the leading cause of bacterial "Sexual Transmitted Disease" (STD) in developing countries. Most often the infection is asymptomatic. However, if the infection remains untreated, it often results in pelvic inflammatory disease (PID), ectopic pregnancy, chronic pelvic pain in women, urethritis and epididymitis in men, or infant pneumonia. The infection can easily be treated with antibiotics, but in most cases damage is already done before the bacterium is noticed. Immunization is considered to be the best approach to reduce *C. trachomatis* infections. However, so far no vaccine is available.

In this study, plasmid DNA (pWRG7079::MOMP) expressing the major outer membrane protein of a human *Chlamydia trachomatis* serovar E strain was tested for the ability to induce an immune response and protect against experimental genital infection with the same serovar. The vaccine was tested in pigs, as they are genetically, physiologically, and immunologically related to humans and suitable for studying *C. trachomatis* infection of the genital system. To increase the immune response, GM-CSF and LTa+LTb were used as adjuvants. GM-CSF was administered seven days before immunization, while the other adjuvants were administered together with the vaccine. Ten pigs were randomly divided into two groups. One group received an intravaginal primo-vaccination and a booster of 500 µg pWRG7079::MOMP, while the other group received the placebo

vaccine pWRG7079. All animals were challenged intravaginally with 10^8 $TCID_{50}$ of *C. trachomatis* serovar E. Pigs immunized with the DNA vaccine showed significantly less macroscopic lesions, vaginal excretion and chlamydial replication in the genital tract, as compared to placebo-vaccinated controls. A clear relationship could be detected between high stimulation indices in the lymphocyte proliferation assays and better protection. However, the infection could not be completely cleared.

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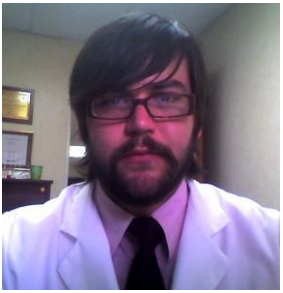
Curriculum vitae

Esmée Lanjouw graduated in Medicine in 2006 at the Erasmus University of Rotterdam. She started her training as consultant in Dermatology at the Erasmus University Medical Centre in Rotterdam, and will finish in December 2013. Her interest in sexually transmitted infections started by a research project on *Chlamydia trachomatis*. She subsequently started a thesis project on *chlamydia* serology in patients and their partners, *chlamydia* diagnostics, and recently wrote the European guideline on the management of *Chlamdyia trachomatis*, as focus of this presentation. At the moment she does her Dermatology training for one year in Liverpool, Broadgreen Hospital.

Abstract

The present guidelines aim to provide comprehensive information regarding the management of infections caused by *Chlamydia trachomatis* in European countries. These recommendations contain important information for physicians and laboratory staff working with sexually transmitted infections (STIs) and/or STI-related issues. Individual European countries may be required to make minor national adjustments to these guidelines as a result of lack of accessibility to some reagents or equipment, or laws in a specific country.

Amsterdam, 17 December 2010



Mauricio Morales García, MD

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Curriculum vitae

Mauricio Morales (mauriciomorales.68@gmail.com) born in Monterrey, México in 1986 was graduated from the medical school at the Autonomous University of the state of Nuevo León (UANL) and University Hospital “Dr. José Eleuterio Gonzalez”. Currently doing community service at Cell Biology and Andrology Lab of Pathology Department. During this period (2009-2010) he was a coworker for EPICLAM Group who was created in 2004, participating in different studies of the group including “Family cluster infection by *Chlamydia trachomatis* in a community area of Monterrey Mexico” in collaboration with the laboratory of Immunogenetics of the VU medical center.

Abstract

In the past 12 years in Mexico, prevalence studies of the infection by *Chlamydia trachomatis* has been focused on women in different population groups. Patients attending gynecological or prenatal care consult with or without symptoms of cervicitis shown values between 3.3% to 28.4%, reporting in commercial sex workers values between 11.1 % to 16.6%.

Few reports have focused on male genital infection showing an incidence around 4.3 % to 25%. Such a wide variation in the prevalence of Ct infection is related with the methodology used for the diagnostic, type of population and sampling technique, nonetheless the lack of knowledge of sample handling which is more evident in retrospective studies. We can conclude that in Mexico is not clearly known the real prevalence of Ct infection.

Our group has focused in the study of the genital infection by Ct on infertile and subfertile individuals, in this group of patients with serious scarring sequelae due the chronically infection we found a prevalence between 80% to 90% by DIF. Morphological evidence of cellular and subcellular damage in cytological preparations with high resolution techniques prove the magnitude of damage due the infection of this germ.

Studies about ocular infection by Ct are even more isolated referring prevalence from 15.5% to 65.9% in follicular conjunctivitis by MIF and DIF technique. Cases of ocular infections vary by geographic region, recording severe cases including trachoma in the southwest of Mexico where by 1985 was reported incidence of

25% of children under 10yo and 80% to 100% in adults over 60yo in a region known as highlands in the state of Chiapas.
Oculus-pharynx-genital infection by Ct has been documented in our group by DIF technique finding a high percentage (nearly 70%) of subfertile couples including their family members who present obstetric and gynecologic complication and recurrent respiratory tract infection in children and adulthood.
In order to determine more precisely the cellular damage of affected organs and its association with the presence of Ct in collaboration with the Laboratory of Immunogenetics, Dept. of Pathology VUmc, Amsterdam we will apply a fresh cytological technique together with DIF and confirmation by PCR in a prospective study in 96 families whit approximately 360 individuals taking 3 samples in different anatomical sites per each one (conjunctival, pharynx, and cervicovaginal, urethral or urine samples depending on the age and sexual behavior), to determine family cluster infection by Ct in the general population.

Jannie van der Helm, MSc

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Curriculum vitae

Jannie van der Helm graduated in Biomedical Sciences in 2006. She currently works as PhD student at the Amsterdam Health Service at both the department of research and the Amsterdam STI Outpatient clinic, which is with approximately 28.000 patients/year the largest STI setting in the country. Her research focuses on the epidemiology of sexually transmitted infections, blood borne infections, and HIV. She performed a study on urogenital *Chlamydia trachomatis* in both Suriname and the Netherlands. She is also participating in the CASCADE Collaboration, a collaboration of 25 HIV seroconverter cohort studies in Europe, Australia, Canada, and sub-Saharan Africa.

Abstract

In this presentation an overview will be given of the CUSTEPA study (*Chlamydia* Rapid Test Evaluation in Paramaribo and Amsterdam). Until recently data on the prevalence of urogenital *chlamydia* in Suriname were lacking. We found a prevalence of 20% in a high risk population of visitors of an STI outpatient clinic and 10% prevalence in a low risk population of women in a birth control clinic Since no appropriate diagnostic tests are available in Suriname, the main goal of the CUSTEPA study was the evaluation of a Point Of Care rapid test for the detection of urogenital *chlamydia* infections in Paramaribo, Suriname. Two sub goals are, to assess the effect of travelling between Suriname and the Netherlands on the transmission of urogenital *chlamydia* between the two countries, and to assess the association between the regular use of vaginal steam baths containing herbs on STI prevalence. Preliminary data will be presented during the presentation.

Amsterdam, 17 December 2010

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Curriculum vitae

Dr Hannelore Götz studied medicine at the Free University of Amsterdam. She was clinically trained in surgery and gynaecology and obtained a certificate in tropical medicine. She worked 3 years in Namibia as District Medical Officer. Since 1995 she works in Public Health in the Netherlands, and is specialised in Infectious Disease Control and Epidemiology (EPIET). Since 2000 she works at the Municipal Public Health Service Rotterdam- Rijnmond at the department of infectious disease control. Her PhD in 2006 was about *Chlamydia* screening. She worked 2 years as regional consultant infectious disease control in South Holland. Currently her responsibilities are now focused on STI HIV control. She is project leader of CSI in Rotterdam and the Medical Head of the STI clinic Rotterdam.

Abstract

Genital Chlamydia trachomatis (Ct) infections nowadays are easy to diagnose even after selfsampling, and oral treatment with a short course of antibiotics facilitates compliance of patients. However in practice we meet challenges in case management.
Examples of cases of doubts about diagnosis, inadequate testing and possible resistance to Azithromycine as well as reasons for re-infections are discussed.

Amsterdam, 17 December 2010

Symposium Organizer
Servaas A. Morré

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Curriculum vitae

Servaas A. Morré, PhD, who is working on *Chlamydia trachomatis* for over 15 years, graduated at the VU University, the Netherlands, in Biochemistry and Molecular Biology in 1994. He worked at The Zaadunie, Department of Cell biology on plant genetics: polyploidization of *Brassica oleracea* (Cauliflower) during cell culture (M. Tan, PhD) and at the Department of Biochemistry and Molecular Biology VU on the genetic aspects of processing of ribosomal RNAs in *Saccharomyces cerevisiae* (Prof. H. Raué, PhD, R. van Nues PhD).

As an Erasmus Fellow he studied at the Universidade Do Porto, Laboratório de Genética Molecular , Portugal , on POLO: an essential kinase for mitosis in *Drosophila melanogaster* (Prof. C. Sunkel, PhD). His PhD thesis performed in Department of Pathology (VU University) was on the epidemiology, diagnostics, and immunopathogenesis of human urogenital *Chlamydia trachomatis* infections. As a postdoc, the Van Coeverden Adriani Foundation made it possible to extend his *Chlamydial* research in the Department of Infectious Diseases, The City of Hope Medical Center, California, USA, in collaboration with Dr. Jim Ito and Dr. Joseph Lyons, specialists in murine modeling. From November 1st 2001, he joined the Laboratory of Immunogenetics, VUmc. His research is focused on the immunogenetics of infectious diseases with still special attention to *Chlamydia trachomatis*, bacterial meningitis (Prof Marceline van Furth, VUmc), and Human Papilloma Virus (Prof. C.J.L.M. Meijer). Together with Prof. Salvador Peña, he organised the “First Mini-symposium *Chlamydia trachomatis* Infections” in December 2004 and in December 2010 we organize already our Seventh “Annual Amsterdam *Chlamydia Meeting*”. In July 2005 at the 16th Biennial meeting of the International Society for Sexually Transmitted Diseases Research (ISSTDR) he was a member of the Scientific Committee and organized amongst others the workshop “Immunogenetics of *Chlamydia trachomatis* Infections”, with Prof. David Mabey (London, UK, Trachoma research). He was organizing Committee member of 6th Meeting of the European Society for *Chlamydia* Research, University of Aarhus, Aarhus, Denmark, July 1-4, 2008 and at this meeting also session organizer: “Immunogenetics of *Chlamydia trachomatis* infections”. He is coordinator of the International *Chlamydia* consortium ICTI (Integrated approach on *Chlamydia trachomatis* Infections) and since 2007 he is Scientific Consortium Director, of the European Framework Programme 6 (FP6) grant (LIFESCIHEALTH FP6, Co-ordination Actions (CA)) on functional genomics research entitled: “Contribution of molecular epidemiology and host-pathogen genomics to understand *Chlamydia trachomatis* disease (Acronym: EpiGen*Chlamydia*)“ with 20 European, African, and US groups. This consortium has recently submitted the FP7 EpiGen*Chlamydia*-II Consortium grant to the EU. As a partner he is participating in two other European FP6 programmes.

He will be the organizer of the 7th Meeting of the European Society for *Chlamydia* Research in 2012 in Amsterdam. Together with Prof. Paul Savelkoul (Medical Microbiology and Infection Control, VUmc), he is co-founder and co-director of a VUmc spin-off company called Microbiome Ltd (Sept 2005), a company specializing in Medical and Microbiological diagnostics, typing, and laboratory consultancy. From the first of January 2008 he is head of the Laboratory of Immunogenetics. Since 1st of Sept 2009 several RIVM reference tasks concerning *Chlamydia trachomatis* were allocated to the VU University Medical Center, Laboratory of Immunogenetics.

Amsterdam, 17 December 2010

Future STI / *Chlamydia* Meetings

9th German *Chlamydia* Workshop
February 22 - 25 2011, Ascona, Switserland
http://www.csf.ethz.ch

5th *Chlamydia* Basic Research Society (CBRS)
March 18 - 21 2011, Redondo Beach (CA), USA

21st ECCMID / 27th ICC
May 7 – 10 2011, Milan, Italy
www.eccmid-icc2010.org

19th ISSTDR Meeting
July 10th – 13th, 2011, Québec, Canada
www.isstdrquebec2011.com / www.isstdr.org

European Conference of National Strategies for Chlamydia Trachomatis and Human Papillomavirus
May 26-27, 2011, Jurmala, Latvia
www.cthpv.org

12th IUSTI World Meeting
November 2nd – 5th 2011, New Delhi, India
www.iusti.org

8th Annual Amsterdam *Chlamydia* Meeting
December 2010, Amsterdam, The Netherlands

7th European *Chlamydia trachomatis* meeting
July 1 – 6 2012, Amsterdam, The Netherlands

20th ISSTDR Meeting
2013, Vienna, Austria
www.isstdr.org

An overview of PhD work in The Netherlands on *Chlamydia trachomatis*

Table I: *PhD theses in the Netherlands*

2010 Caroline J. Bax*	University of Leiden / Medical Center Haaglanden
2010 Janneke E. den Hartog*	Maastricht University
2010 Ingrid Rours	Erasmus University Rotterdam
2008 Liesbeth Duijts*	Erasmus University Rotterdam
2007 Denise A.M. Perquin	University of Leiden / Medical Center Haaglanden
2006 Sander Ouburg	VU University Amsterdam
2006 Joke Spaargaren*	University of Amsterdam and VU University Amsterdam
2006 Tanja P. Gijsen*	Maastricht University
2006 Hannelore M. Götz*	Erasmus University Rotterdam
2005 Jan E.A.M. van Bergen*	University of Amsterdam
2004 Joseph M. Lyons*	City of Hope Medical Center, CA, USA, and VU University Amsterdam
2003 Laura S. Murillo	VU University Amsterdam
2002 Monica Molano Luque	VU University Amsterdam
2001 Irene G.M. van Valkengoed*	VU University Amsterdam
1999 Servaas A. Morré*	VU University Amsterdam
1999 Johannes W. Trum	University of Amsterdam
1999 Bernardus W.J. Mol	University of Amsterdam
1998 Yvonne T.H.P. van Duijnhoven	University of Amsterdam
1997 Marita J.W. van de Laar	University of Amsterdam
1995 Jar Lan*	VU University Amsterdam
1994 Josina van Ulsen	Erasmus University Rotterdam
1994 Jacobus M. Ossewaarde*	University of Utrecht
1993 Hans J.H. Theunissen*	Erasmus University Rotterdam
1992 Johannes T.M. van der Schoot*	University of Amsterdam
1992 Arent J.P. Boeke and Janny H. Dekker	VU University Amsterdam
1992 André H. van der Willigen	Erasmus University Rotterdam
1991 Eric C.J. Claas	VU University Amsterdam
1990 Gijsbertus J.H.M. Ruijs*	Rijksuniversiteit Groningen
1989 Henk J. Vonsée	Rijksuniversiteit Limburg
1987 Kie H. Tjiam*	Erasmus University Rotterdam

**Chlamydia trachomatis* is the major focus in the thesis.

Table II: *Current PhD fellows working (partially) on* Chlamydia trachomatis.

Arnold Catsburg	VU University Amsterdam
Vitaly Smelov	St. Petersburg State Medical University, Russia and VU University Amsterdam
Koen Quint	VU University Amsterdam
Laura van Dommelen	Maastricht University
Esmée Lanjouw	Erasmus University Rotterdam
Ouafae Karimi	VU University Amsterdam
Reinier Bom	University of Amsterdam
Stephan P. Verweij	VU University Amsterdam
Claire Geluk	Medical Center Haaglanden
Monique Pereboom	VU University Amsterdam
Jannie van der Helm	Public health services / University of Amsterdam

Amsterdam, 17 December 2010

An overview of PhD work on *Chlamydiae*

Table III: *PhD theses on Chlamydiae*

2010 Katelijn Schautteet*	Ghent University, Belgium	C / CT
2010 Caroline van Droogenbroeck*	Ghent University, Belgium	CPs
2009 J.J.M. Bouwman	Utrecht University, The Netherlands	CP
2009 Delphine Beeckman*	Ghent University, Belgium	CPs
2008 Kristel Verminnen*	Ghent University, Belgium	CPs
2008 Taher Harkinezhad*	Ghent University, Belgium	CPs
2008 M.D. de Kruif	University of Amsterdam, The Netherlands	CP
2007 Edou R. Heddema*	University of Amsterdam, The Netherlands	CPs
2007 Ellen Boelen*	Maastricht University, The Netherlands	CP
2006 Arnaud Daniël Hauer	Leiden University, The Netherlands	CP
2005 Tom Geens*	Ghent University, Belgium	CPs
2005 Marnix Van Loock*	Catholic University Leuven, Belgium	CPs
2005 Manuela Voorend*	Maastricht University, The Netherlands	CP
2005 Tryphon Vainas	Maastricht University, The Netherlands	CP
2004 H.F. Berg	University of Amsterdam, The Netherlands	CP
2004 Boulos Maraha*	VU Universtiy, Amsterdam, The Netherlands	CP
1997 Roel P.A.J. Verkooyen*	Erasmus University Rotterdam, The Netherlands	CP
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Table IV: *Current PhD fellows working (partially) on* Chlamydiae.

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Stefanie Lagae	Ghent University, Belgium	CPs
Lizi Yin	Ghent University, Belgium	C
Evelien de Clercq	Ghent University, Belgium	CT

**Chlamydiae* are the major focus in the thesis.
C: Chlamydiae
CT: C. trachomatis
CP: C. pneumoniae
CPs: C. psittaci

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Amsterdam, 17 December 2010

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Accreditation is requested for this symposium from:

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