Open Journal of Medical Microbiology, **2013, 3, 105-124**
http://dx.doi.org/10.4236/ojmm.2013.32017 Published Online June 2013 (http://www.scirp.org/journal/ojmm)

Global Rates and Prevalence of Urogenital Mycoplasmosis: Assembly of a Dataset from Peer-Reviewed Literature*

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Received February 3, 2013; revised March 4, 2013; accepted March 11, 2013

ABSTRACT

Rates of urogenital mycoplasmosis associated with *Mycoplasma genitalium*, *Mycoplasma hominis*, *Ureaplasma urealyticum*, and *Ureaplasma parvum* have been reported numerous times, and frequently show a wide range of findings. Differing diagnostic techniques, population targeting, temporal and spatial data collection, and coincident infections make the conclusions from these analyses difficult to compare. We generated a single data set including the infection rate, geographic location, year, study population, diagnostic method, and clinical signs for these organisms by performing literature searches with the species names and compiling the findings. Studies focusing on basic research or reporting clinical surveys where these criteria were not reported were excluded. A statistical analysis of the dataset parameters found that: diagnostic method does not significantly correlate with positive specimen rate but does correlate with the year of publication, and the number of publications correlated significantly with year, indicating that this topic is of growing interest. Further analysis indicated that *Ureaplasma* species infection rate is significantly higher in pregnant women across all studies. Associations with distinct clinical presentation could not be made on datasets assembled across studies due to the number of confounding variables presented in each. The generated data set represents a large amount of temporal, geographic, and clinical data that can be utilized in future communications.

Keywords: *Mycoplasma genitalium*; *Mycoplasma hominis*; *Ureaplasma*; Urogenital Mycoplasma

1. Introduction

Members of the genera *Mycoplasma* and *Ureaplasma* are small, wall-less bacteria that parasitize vertebrate hosts in an obligate manner. Infections with these species exhibit a spectrum of clinical manifestations ranging from asymptomatic states to the classical manifestation of a chronic inflammatory illness that is not typically fatal. The primary sites of mycoplasmal infections are mucosal surfaces, and in humans infection is typically seen in the respiratory or urogenital tract. Urogenital mycoplasmosis of humans is typically associated with *Mycoplasma genitalium* (MG), *Mycoplasma hominis* (MH), *Ureaplasma urealyticum* (UU), *Ureaplasma parvum* (UP), or a complex infection of more than one of these species. *Mycoplasma penetrans* and *Mycoplasma pirum* are not commonly associated with clinical signs [1]. All of these species can be detected in clinically normal patients, but their association with urogenital disease has been the subject of extensive exploration.

Numerous studies have reported rates of patient infections in the context of their urogenital health with ambiguous results. The clinical states associated with *Ureaplasma* species (Usp) and MH appear to be strain- or patient-specific, and reportedly include nongonococcal urethritis (NGU) (Usp), bacterial vaginosis (MH), spontaneous abortion, or preterm labor (MH, Usp) [2]. In contrast, the causal role of MG in NGU, pelvic inflammatory disease, spontaneous abortion, and infertility is generally accepted, and as such it is now considered an emerging urogenital pathogen [3]. Infection of pregnant women with Usp has been associated with preterm labor and premature rupture of membranes, and the perinatal infants can develop Usp infections of the respiratory tract or central nervous system [4-6].

Diagnosis of urogenital mycoplasmosis was originally based on direct culture of MH or Usp from the urogenital tract, urine, semen, or cervical mucus, and often requires the services of a specialized laboratory [1]. Recovery of

*This work was supported by funds from the Robert M. Fisher Memorial Foundation (MM).
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MG from affected tissues has historically been, and remains, particularly challenging. Due to the difficulties associated with culture, several other diagnostic methods have been developed and employed in recent years including polymerase chain reaction (PCR)-based nucleic acid detection strategies, serological diagnosis, and commercial assays based on detection of ammonia following the hydrolysis of urea (Usp) or catabolism of arginine (MH). Between the increased sensitivity of PCR and the technical limitations of culturing the organism, nucleic acid detection is used almost exclusively to diagnose MG infection.

Because the volume of clinical surveys investigating urogenital mycoplasmosis is large and the geographic location, study populations, clinical features, compounding factors, diagnostic methods, and clinical correlation with MG, MH, and Usp infection are disparate, we sought to compile a single data set describing the currently published clinical data on this topic and identify statistical trends across studies.

2. Materials and Methods

2.1. Literature Analysis

An analysis of primary literature was performed using the National Center for Biotechnology Information and the National Library of Medicine database PubMed. The search terms utilized were *Mycoplasma genitalium*, *Mycoplasma hominis*, and *Ureaplasma*. Studies describing basic research on the biology and/or pathogenicity of the bacteria were immediately excluded. The remaining medically-oriented studies were excluded if minimal clinical information was described, rates of infection were not provided, or differentiation between MG, MH, or Usp was not performed. The distinction was not drawn for *U. urealyticum* and *U. parvum* because many studies predate the description of the two distinct species. Studies were included if: 1) rates of definitive positive diagnosis of urogenital mycoplasmosis were reported, and 2) descriptions of associated clinical signs, the geographic origin of the samples, the diagnostic method, and the study population were reported. The dataset reflect studies published up to and including May 2011. Numbers of patients were sorted by clinical presentations and detected species. Asymptomatic control patients from each study were included in the dataset.

2.2. Statistical Analysis

Pearson correlation analysis between year and citations was performed. Spearman rank correlations between incidence in clinically affected individuals for each species and year, and incidence and diagnostic method were performed. Individual types of the categorical variable "diagnostic method" were assigned numeric values based on the sensitivity of the method (nucleic acid detection = 1; commercial diagnostic kits = 2, non-commercial ELISA = 3, laboratory culture = 4). The significance of incidence in pregnant vs. nonpregnant women was determined by χ^2 analysis. All statistical procedures were performed using Origin 8.6 (OriginLab Corporation, Northampton, MA), and a P value of less than 0.05 was considered significant.

3. Results

3.1. Description of Dataset

A total 172 studies including data from 53 countries (in addition to Scotland and Palestine) on all populated continents were examined (**Table S1**). The studies were published between 1975 and 2011 in 85 different journals (**Table 1**). A total of 96,361 patients (27,952 for MG, 23,928 for MH, and 44,481 for Usp) were tested by one of four diagnostic methods. Different prevalence rates for each species were observed overall and for each clinical presentation (**Table 2**). Patient totals from individual studies are presented in **Tables S2-S4** for MG, MH, and Usp, respectively. Rates of infection in patients with urethritis, adverse pregnancy outcomes, infertility, and inflammatory conditions of the genital tract are presented in **Tables S5-S8**, respectively.

3.2. Statistical Analysis

Significant correlations were found between the diagnostic method utilized and the year of publication (inverse, $P < 0.0001$), and the number of citations and year (direct, $P < 0.001$). The correlation between diagnostic method ranked by sensitivity and positive percent of the population tested was not significant (**Table 3**). Pregnant women were significantly ($P < 0.005$) more likely to be infected with Usp than nonpregnant women regardless of the presence or absence of symptoms. Pregnant women were significantly ($P < 0.05$) less likely to be infected with MG. Infection with MH had no significant association with pregnancy.

4. Discussion

An analysis of primary literature was performed, and a single dataset describing rates of urogenital mycoplasmosis was described. Significant correlations were found between the diagnostic method utilized and the year of publication (inverse, $P < 0.0001$), and the number of citations and year (direct, $P < 0.001$), indicating that increasing numbers of studies reporting incidence of urogenital mycoplasmosis as determined by more sensitive methods such as nucleic acid detection and commercial detection kits are being published. The country with the greatest number of distinct populations studied in publi-

Table 1. Parameter totals of included studies.

Studies	Countries	Years	Journals	Diagnostic methods
172	53*	1975-2011	85	4

*Includes the territories of Scotland and Palestine.

Table 2. Patient totals[a].

Species	Total	CA	UR	PTL	INF	INFL	PC	LBW/CLD	ASM	ND
MG	1954	1023	795	13	45	157	-	-	681	250
	27952	15838	12264	650	303	2450			8304	3810
MH	4104	1021	317	28	111	475	90	-	621	2492
	23928	8229	4680	127	1130	1911	372		5632	10198
Usp	14975	5749	2811	558	1300	508	-	100	4353	4640
	44481	17498	9792	1064	4053	1627		284	13720	12828

[a]Cells reflect the combined number of positives (top subcell) and number of patients tested across studies (bottom subcell). Abbreviations used: CA: clinically affected; UR: urethritis; PTL: preterm labor; INF: infertility; INFL: inflammatory conditions (*i.e.*, bacterial vaginosis, cervicitis, pelvic inflammatory disease); PC: prostate cancer; LBW/CLD: low birth weight and/or chronic lung disease of infants; ASM: asymptomatic; ND: no description of specific clinical signs while being distinguished from asymptomatic patients.

Table 3. Study parameters.

Statistical parameter	Diagnostic method and % infected[a]	Diagnostic method and year	Number of citations and year
Pearson coefficient	N/A	N/A	0.455
Spearman's rho	0.127	−0.738	0.477
P value	0.085	0	0.008, 0.009
Significant?	No	Yes, $P < 0.0001$	Yes, $P < 0.01$

[a]Values from both all organisms and both symptomatic and asymptomatic patients included.

cations meeting our criteria was the United States (41), followed by Japan (26) and China (18). All populated continents were represented in our analysis.

Usp have consistently been reported at higher rates in pregnant women as compared to nonpregnant women, but associations with clinical signs have been inconsistent. The generation of pathologic lesions during mycoplasmosis can be both strain variable and dependent on host factors; however, the presence or absence of MG, MH, or Usp during pregnancy as an unambiguous condition allows for concrete analysis. Across studies, we found that Usp were detected in pregnant women significantly more often than nonpregnant women. The association of Usp with low birth weight and chronic lung disease in preterm infants has been established by multiple studies [4,5], illustrating the clinical importance of this association. We also found that pregnant women were significantly less likely to be infected with MG; however, this likely represents an anomaly stemming from published study designs investigating MG and infertility. Women of infertile couples are often, but not always, significantly more likely to have MG infection than controls. The focus on infertility indicates the ideal asymptomatic control patients for such studies are pregnant women. It is far more probable that MG infection leads to infertility than pregnancy as a condition is somehow protective against MG infection.

The association of MG, MH and Usp with specific urogential health concerns remains somewhat difficult to define because of the equivocal findings of a large number of clinical studies. Confounding factors such as coinfection with additional sexually transmitted pathogens, the narrow focus on nonrepresentative populations such as infertile couples or STI clinic patients, and the differing age of patients makes the combination of data for each pathogen across studies inadvisable. Previously described differences between strains of MG, MH, and Usp include antibiotic susceptibility patterns [7-11] and the expression or variation of certain virulence factors including adhesins [12,13], biofilm formation [14], and the multiple-banded antigen of Usp [15]. In addition, comparative analysis of the complete genomes of nineteen *Ureaplasma* strains (representing the fourteen serovars) revealed a greater predilection for UU to undergo horizontal gene transfer, making it more subject to genome plasticity than UP [16]. UU has been associated with more severe clinical presentations than UP [16], which is potentially explained by the acquisition of novel genes. In addition, the failure to speciate between the apparently more pathogenic UU and the apparently less

pathogenic UP may contribute to the ambiguity of Usp in association with clinical presentations. Heterogeneity of all three pathogens undoubtedly contributes to the spectrum of clinical presentations ranging from asymptomatic carriage to chronic inflammatory disease. Furthermore, the immune and nutritional status of the patient likely impacts the presentation of disease.

Infection with MG has been associated with increased shedding of human immunodeficiency virus (HIV) particles in two distinct studies, indicating that MG may facilitate HIV transmission [17]. Additionally, the presence of genital tract white blood cells due to urogenital inflammation regardless of cause is association with increased HIV shedding [18]. Because of the public health implications of increased HIV transmission, the prevalence of agents capable of causing urogenital inflammation should thus be monitored. Compiling the findings of studies describing rates of urogenital mycoplasmosis in clinically affected and asymptomatic patients represents a step toward illustrating the presence of these pro-inflammatory organisms.

5. Conclusion

The value of the compiled dataset is the illustration of the numbers of patients being evaluated for MG, MH, and Usp. The parameters of the dataset illustrate increasing clinical interest in the incidence of urogenital mycoplasmosis, and that increasingly molecular methods are being used to detect the organisms. Confounding variables make the analysis of infection rates across all clinically affected versus all asymptomatically infected patients inadvisable; however, the generated dataset represents a large amount of temporal, geographic, and clinical data that can be utilized in future exchanges.

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Supplement

Table S1. Peer-reviewed studies represented in this dataset.

Study number	First author	Title	Journal	Year
1	Wetmore C.M.	Demographic, behavioral, and clinical characteristics of men with non-gonococcal urethritis differ by etiology: A case-comparison study	*Journal of Infection and Chemotherapy*	2011
2	Shigehara K.	Prevalence of genital Mycoplasma, Ureaplasma, Gardnerella, and human papillomavirus in Japanese men with Urethritis, and risk factors for detection of urethral human papillomavirus infection	*Sexually Transmitted Diseases*	2011
3	Aydin Y.	Association of cervical infection of *Chlamydia trachomatis*, *Ureaplasma urealyticum* and *Mycoplasma hominis* with peritoneum colonization in pregnancy	*Journal of Obstetrics and Gyneacology*	2010
4	Vesic S.	Chlamydia trachomatis and urogenital mycoplasmas in nonconococcal in men	*Medicinski Pregled*	2010
5	Govender S.	Prevalence of genital mycoplasmas, ureaplasmas and chlamydia in pregnancy	*Journal of Obstetrics and Gynaecology*	2009
6	Mares M.	The prevalence of some bacterial markers in female patients undergoing an initial infertility evaluation in north-east Romania	*Roumanian Archives of Microbiology and Immunology*	2009
7	Barykova Iua.	Identification of Mycoplasma in patients with suspected prostate cancer	*Oncotarget*	2010
8	Zeighami H.	Detection of *Ureaplasma urealyticum* in semen of infertile men by PCR	*Pakistan Journal of Biological Sciences*	2007
9	Bujoid E.	Bacteriology of Amniotic fluid in women with suspected cervical insufficiency	*Journal of Obstetrics and Gynaecology Canada*	2008
10	Hagerty C.L.	Clinical characteristics of bacterial vaginosis among women testing positive for fastidious bacteria	*Sexually Transmitted Infections*	2009
11	Agbakoba N.R.	PCR reaction assay of Ureaplasma strains isolated from high vaginal swabs of wmen in Ibadan, Nigeria	*African Journal of Medicine and Medical Sciences*	2008
12	Latthe P.M.	Mycoplasma and Ureaplasma Colonization in women with lower urinary tract symptoms	*Journal of Obstetrics and Gynaecology*	2008
13	Gdoura R.	Acreening for Bacterial Pathogens in Semen samples from Infertile men with and without Leukocytospermia	*Andrologia*	2008
14	Zheng J.	[*Ureaplasma urealyticum* infection in the genital tract reduces seminal quality in infertile men]	*Zhonghua Nan Ke Xue*	2008
15	Kacerovský M.	[Preterm premature rupture of membranes and *Ureaplasma urealyticum*]	*Ceska gynekologie / Ceska lekarska spolecnost J. Ev. Purkyne*	2008
16	Nassar F.A.	Detection of Chlamydia trachomatis and Mycoplasma hominis Genitalium and *Ureaplasma urealyticum* by PCR in patients with sterile pyuria	*Advances in Medical Sciences*	2008
17	Yu J.T.	Asymptomatic urethral infection in male sexually transmitted disease clinic attendees	*International Journal of STD and AIDS*	2008
18	Zhang X.	Risk factors of HIV infection and prevalence of co-infections among men who have sex with men in Beijing, China	*AIDS*	2007
19	Wenmen W.M.	Demographic, clinical and microbiological characteristics of maternity patients: A Canadian clinical cohort study	*The Canadian Journal of Infectious Diseases*	2002
20	Gdoura R.	*Ureaplasma urealyticum*, *Ureaplasma parvum*, *Mycoplasma hominis* and *Mycoplasma Genitalium* infections and semen quality of infertile men	*BMC Infectious Diseases*	2007
21	Di Bartolomeo S.	[Prevalence for associated microorganisms in genital discharge, Argentina]	*Revista De Saude Publica*	2002
22	Castro-Alcaraz S.	Patterns of Colonization with *Ureaplasma urealyticum* during neonatal intensive care unit hospitalizations of very low birth weight infants and the development of chronic lung disease	*Pediatrics*	2002
23	Odendaal H.J.	Preterm labor—Is *Mycoplasma Hominis* involved?	*South African Medical Journal*	2002

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24	Yu P.	[Research in the relationship between Chlamydia and Ureaplasma and infertility]	*Bulletin of Hunan Medical University*	1998
25	Wang N.	[Epidemiological study on mycoplasmas colonization and infection in the female genital tract]	*Zhonghua Liu Xing Bing Xue Za Zhi*	1992
26	Martens G.	Presence of Chlamydia, Mycoplasma, Ureaplasma, and other bacteria in the upper and lower genital tracts of fertile and infertile populations	*Infectious Diseases in Obstetrics and Gynecology*	1993
27	Samra Z.	Prevalence of sexually transmitted pathogens among women attending a methadone clinic in Israel	*Genitourinary Medicine*	1991
28	Gogate A.	*Mycoplasma hominis* infections in female genital tract & use of immunofluoscence for antibody detection	*The Indian Journal of Medical Research*	1990
29	Yu P.	[Research in the relationship between Chlamydia and Ureaplasma and infertility]	*Bulletin of Hunan Medical University*	1998
30	Fenkci V.	Have *Ureaplasma urealyticum* and *Mycoplasma hominis* infections any significant effect on women fertility?	*Le Infezioni in Medicina*: *Revista Periodica di Eziological*, *Epidemiologica*, *Diaonostica*, *Clinica Terapia delle Patologie Infettive*	2002
31	Domingues D.	Genital mycoplasmas in women attending a family planning clinic in Guine-Bissau and their susceptibility to antimicrobial agents	*Acta Tropica*	2003
32	Srugo	Agents of non-gonococcal urethritis in males attending an Israeli clinic for sexually transmitted diseases	*The Israel Medical Association Journal*	2003
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34	Di Bartolomeo S.	[Prevalence of associated microorganisms in genital discharge, Argentina]	*Revista de Saude Publica*	2002
35	Domingues D.	*Ureaplasma urealyticum* biovar determintion in women attending a family planning clinic in Guine-Bissau, using polymerase chain reaction of the multiple-banded antigen gene	*Journal of Clinical Laboratory Analysis*	2002
36	Rodriguez R.	[Genital infection and infertility]		
37	Di Bartolomeo S.	[Microbiologic profile in symptomatic pregnant women's genital secretions in Gran Buenos Aires, Argentina]	*Enfermedades Infecciosas y Microbiologia Clinica*	2001
38	De Moreno N.O.	[The presence of genital mycoplasmas in women of reproductive age]	*Revista Medica de Panama*	1993
39	Dyke M.P.	*Ureaplasma urealyticum* in a neonatal intensive care population	*Journal of Paediatrcs and Child Health*	1993
40	Romero R.	Microbial invasion of the amniotic cavity during term labor. Prevalence and clinical significance	*The Journal of Reproductive Medicine*	1993
41	Valencia G.B.	*Mycoplasma hominis* and *Ureaplasma urealyticum* in neonates with suspected infection	*The Pediatric Infectious Disease Journal*	1993
42	Hillier S.L.	The normal vaginal flora, H2O2-producing lactobacilli, and bacterial vaginosis in pregnant women	*Clinical Infectious Diseases*: *An official Publication of the Infectious Diseases Society of America*	1993
43	Martens M.G.	Presence of Chlamydia, Mycoplasma, Ureaplasma, and other bacteria in the upper and lower genital tracts of fertile and infertile populations	*Infectious Diseases in Obstetrics and Gynecology*	1993
44	Szostek S.	[Papilloma virus infections in women with cervical pathology]	*Medycyna Doswiadczalna I Mikrobiologia*	1993
45	Reid I.	[*Mycoplasma hominis* and *Ureaplasma urealyticum* in pregnant and infertile women. Differences in tubal pathology]	*Revista Chilena de Obstetricia y Ginecologia*	1993
46	Petitjean J.	[A prospective study of mycoplasma infection in a neonatal unit]	*Annales de Pediatrie*	1993
47	Zhao J.	[Study on the infections of U. urealyticum, M. Hominis, and C. trachomatis in patients with venereal diseases and healthy controls in three areas of China]	*Zhonghua Liu Xing Bing Xue Za Zhi*	1992
48	De Nader O.M.	[Prevalence in Tucuman of Chlamydia trachomatis and *Ureaplasma urealyticum* in sexually active women]	*Revista Argentina de Microbiologia*	1992

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49	Van Rensburg H.J.	The prevalence of potential pathogenic micro-organisms in the endocervix of pregnant women at Tygerberg hospital	*South African Medical Journal*	1992
50	Segonds C.	[Mycoplasmas and pregnancy. Preliminary study]	*Journal de Gynecologie, Obstetrique et biologie de la Reproduction*	1992
51	Stefanik M.	Microbial causative agents of male urethritis	*Journal of Hygiene, Epidemiology, Microbiology and Immunology*	1992
52	Wang N.	[Genital mycoplasma colonization in the female genital tract]	*Zhonghua Fu Chan Ke Za Zhi*	1991
53	Takamizawa S.	[A study of *Ureaplasma urealyticum* pathogenicity in human genitourinary tract]	*The Journal of the Japanese Association for Infectious Diseases*	1991
54	Matsudu T.	[*Ureaplasma urealyticum* and *Mycoplasma hominis* in male urethritis]	*Hinyokika Kiyo. Acta Urologica Japonica*	1991
55	Rodriguez-Pichardo A.	Sexually transmitted diseases in homosexual males in Seville, Spain	*Genitourinary Medicine*	1991
56	Montagut J.M.	Ureaplasma in semen and IVF	*Human Reproduction*	1991
57	Orduna Domingo A.	[Age and sex distribution of sexually transmitted disease in Valladolid, A study of 5076 cases]	*Revista de Sanidad e Higiene Publica*	1991
58	Lefevre J.C.	Clinical and microbiologic features of urethritis in men in Toulouse, France	*Sexually Transmitted Diseases*	1991
59	Bucek R.	[Isolation of mycoplasmas from female genitalia]	*Ceskoslovenska Epidemiologie, Mikrobiologie, Imunologie*	1989
60	Vonsee H.J.	Detection of Chlamydia trachomatis, Mycoplasma hominis and *Ureaplasma urealyticum* in pregnant Dutch women	*European Journal of Obstetrics, Gynecology, and Reproductive Biology*	1989
61	Deodhar L.	Co-existence of N. gonorrhoeae and U. urealyticum in male urethra	*Journal of Postgraduate Medicine*	1989
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Table S2. Rates and clinical presentations of *Mycoplasma genitalium.*

Study number	Location	Continent	Population	Total tested	#Positive	MG %	Presentation	Year	Diagnostic method
130	Venezuela	South America	Gyn patients	172	13	7.5	"Symptomatic"	2008	PCR
148	UK	Europe	Women w/o BV	17	2	12	BV	2000	PCR
115	USA (Baltimore)	North America	Women at STI clinics	324	93	28.6	Cervicitis	2009	PCR
139	Japan	Asia	Women with cervicitis/adnexitis	103	7	6.8	Cervicitis/adnex	1997	PCR
129	Poland	Europe	Infertile women	51	10	19.6	Infertility	2008	PCR
135	Denmark	Europe	Infertile women	132	29	22	Infertility	2000	serology
131	Norway	Europe	Female STI clinic patients	7646	344	4.5	LGTI, urethritis	2009	PCR
1	USA (Seattle)	North America	Men STI clinic	370	46	12.5	NGU	2011	PCR
17	China (Hong Kong)	Asia	Male STI clinic patients	36	5	13.9	NGU	2007	PCR
120	Brazil	South America	HIV men w/NGU	110	10	9.1	NGU	2000	Culture—>PCR/RFLP
149	Central African Republic	Africa	Men STI clinic	100	15	15	NGU	2001	PCR
156	USA	North America	Asympt controls	125	5	4	NGU	2001	PCR
157	USA (New Orleans)	North America	Asympt controls	184	13	7	NGU	2002	PCR
158	Venezuela	South America	Asympt controls	172	7	4.1	NGU	2008	PCR
133	UK	Europe	PID patients	46	6	13	PID	2003	PCR
117	Japan	Asia	Men with gonococcal urethritis	45	2	4.4	Postgonococcal urethritis	1996	PCR
114	Sweden	Europe	Pregnant women-induced abortion	1960	49	2.5	Post term PID	2007	PCR
112	Peru	South America	Pregnant women	650	13	2	Preterm labor	2010	PCR
16	Palestine	Middle East	Sterile pyuria patients	200	6	3	Pyuria	2008	PCR
136	West Africa (7 countries)	Africa	Male urethritis patients	659	66	10	Urethral discharge	2001	PCR
2	Japan	Asia	Male urethritis patients	178	32	18	Urethritis	2011	PCR
116	USA (Baltimore)	North America	Men at STI clinics	153	34	22.2	Urethritis	2009	PCR
122	Sweden	Europe	Men at STI clinics	451	27	6	Urethritis	2005	PCR
140	Japan	Asia	Male GU patients	75	3	4	Urethritis	2000	PCR
140	Japan	Asia	Male NGU patients	76	10	13.1	Urethritis	2000	PCR
141	Sweden	Europe	Male STI clinic patients (no urethritis)	50	5	10	Urethritis	2000	PCR
159	China	Asia	Asympt controls	238	5	2.1	Urethritis	2008	PCR
160	South Africa	South America	NGU patients	96	16	16.7	Urethritis	2002	PCR
161	New Zealand	Australia	Asymptomatic	199	4	2	Urethritis	2010	PCR
162	Italy	Europe	Asymptomatic	23	1	4.3	Urethritis	1999	PCR
163	South Africa	Africa	Asymptomatic	100	3	3	Urethritis	2004	PCR
164	South Africa	Africa	Urethritis patients	665	115	17.3	Urethritis	2010	TMA assay
165	Russia	Asia	Asymptomatic	30	3	10	Urethritis	2009	PCR
122	Sweden	Europe	Women at STI clinics	283	18	6.3	Urethritis, cervicitis	2005	PCR
20	Tunisia	Africa	Infertile men	120	6	5	Infertility	2011	PCR

Abbreviations used: STI: sexually transmitted infection; NGU: nongonococcal urethritis; PCR: polymerase chain reaction; PID: pelvic inflammatory disease; PTL: preterm labor; LGTI: lower genital tract infection; BV: bacterial vaginosis.

Table S3. Rates and clinical presentations of *Mycoplasma hominis.*

Study number	Location	Continent	Population	Total tested	#Positive	MH%	Presentation	Year	Diagnostic method
2	Japan	Asia	Male urethritis patients	176	21	12	Urethritis	2011	PCR
51	Czech Republic	Europe	Male urethritis patients	150	28	18.7	Urethritis	1992	Culture
76	USA (MT)	North America	Rural population	2408	96	4	Urethritis	1987	Culture
33	Mexico	North America	Primary care UTI patients	436	9	2	UTI	2002	Culture
89	Japan	Asia	Pregnant women w/preterm birth	90	15	17	Preterm labor	1986	Culture
169	Sweden	Europe	Pregnant women w/preterm birth	37	13	34.7	Preterm labor	2003	Culture
7	Russia	Europe	Prostate cancer patients	125	26	20.5	Prostate cancer	2010	PCR
7	Russia	Europe	Prostate cancer patients	118	36	30.5	Prostate cancer	2010	Serology
167	Russia	Asia	Prostate cancer patients	247	65	26.2	Prostate cancer	2011	PCR, serology
16	Palestine	Middle East	Sterile pyuria patients	200	2	1	Pyuria	2008	PCR
64	Croatia	Europe	13 - 19 years old	126	18	14.3	Relapsing cervicitis	1989	Culture
4	Serbia	Europe	Heteros men	299	24	8.02	NGU	2010	Mycoplasma IST assay
32	Israel	Middle East	Male STI clinic patients	71	9	13.2	NGU	1996	Culture
65	Croatia	Europe	Urethritis patients	184	26	14.13	NGU	1989	Culture
71	Greece	Europe	Urethritis female	237	67	28.14	NGU	1988	Culture
78	Germany	Europe	Male urethritis patients	169	8	4.7	NGU	1987	Culture
120	Brazil	South America	HIV neg men w/NGU	110	1	0.9	NGU	2000	Culture-PCR/RFLP
156	USA	North America	NGU patients	106	7	7	NGU	2001	PCR
92	Italy	Europe	Infertile men	115	3	2.6	Infertility	1984	Culture
28	India (Bombay)	Asia	BV	327	35	10.7	BV	1990	Culture
143	Ivory Coast	Africa	Pregnant women	551	281	51	BV	2000	Culture
148	UK	Europe	Women with BV	17	9	53	BV	2000	Culture
90	Denmark	Europe	Female cervicitis; partners of male NGU patients	85	31	36	Cervicitis, urethritis	1985	Culture
147	Brazil	South America	Women with UG signs	77	4	5	Cervicitis/salpingitis	1987	Culture
150	Kenya	Africa	Postpartum endometritis	35	19	53	Endometritis (postpartum)	1988	Culture
95	Germany	Europe	Male gonococcal urethritis patients	143	19	13	GC urethritis	1983	Culture
37	Argentina	South America	Pregnant women w/BV	198	28	14.1	Genital discharge	2001	Culture
170	Kenya, South Africa, Swaziland	Africa	Men with UG lesions	256	41	16	Genital ulceration	1983	Culture
26*	USA (Texas)	North America	Infertile men	80	4	5	Infertility	1993	Culture
30	Turkey	Middle East	Infertile women	50	4	8	Infertility	2002	Culture
36	Spain	Europe	Infertile people	375	18	4.8	Infertility	2001	Culture
43	USA (Texas)	North America	Infertile women	79	22	28	Infertility	1993	Culture
145	Russia	Asia	Infertile couples	148	25	16.9	Infertility	2000	PCR
13	Tunisia	Africa	Infertile men	116	12	10.3	Infertility, lukocytospermia	2008	PCR
45	Chile	South America	Infertile women	47	10	21	Infertility	1993	Culture
20	Tunisia	Africa	Infertile men	120	13	10.8	LSC, ASM	2007	PCR
47	China	Asia	VD patients	239	10	4.18	"VD"	1990	Serology

Abbreviations used: UG: urogenital; UTI: urinary tract infection; STI: sexually transmitted infection; NGU: nongonococcal urethritis; GU: gonococcal urethritis; PCR: polymerase chain reaction; PID: pelvic inflammatory disease; LSC: low sperm count; ASM: abnormal sperm morphology; LGTI: lower genital tract infection; BV: bacterial vaginosis; VD: venereal disease.

Table S4. Rates and clinical presentations of *Ureaplasma* species.

Study number	Location	Continent	Population	Total tested	#Positive	Usp %	Presentation	Year	Diagnostic method
96	Canada (Toronto)	North America	Miscarriage	71	60	84.5	APO	1983	Serology
92	Italy	Europe	Infertile men	116	50	42.2	Bacteriospermia infertility	1984	Culture
99	Australia	Australia	Pregnant women with bacturia	44	21	48	Bacturia	1981	Culture
28	India (Bombay)	Asia	BV	325	151	46.5	BV	1990	Culture
148	UK	Europe	Women with BV	17	11	65	BV	2000	PCR
9	Canada (Quebec)	North America	Pregnant women (CI)	15	5	33	Cervical insufficiency	2008	PCR
44	Poland	Europe	Cervical neoplasia patients	109	44	40.5	Cervical neoplasia (HPV+)	1993	Culture
48	Argentina	South America	Active women	100	4	4	Cervicitis	1992	Culture
147	Brazil	South America	Women with UG signs	51	30	58.5	Cervicitis, salpingtitis	1987	Culture
67	Mexico	North America	Non-pregnant women	129	16	12.4	Cervicovaginitis	1989	Culture
67	Mexico	North America	Pregnant women	105	21	20	Cervicovaginitis	1989	Culture
68	France	Europe	Pregnant women-chorioamnionitis	160	69	43	Chorioamnionitis	1989	Culture
22	USA (New York)	North America	Preterm infants	125	40	32	CLD	1999	Culture
150	Kenya	Africa	Postpartum endometritis	30	23	77	Endometritis (postpartum)	1988	Culture
10	USA (13 sites)	North America	Women with PID	50	16	32	Endometritis, PID, BV	2009	PCR
37	Argentina	South America	Pregnant women w/BV	197	58	29.5	Genital discharge	2001	Culture
44	Poland	Europe	PID patients	52	29	55.6	GID	1993	Culture
95	Germany	Europe	Male gonococcal urethritis patients	144	49	34	GU	1983	Culture
53	Japan	Asia	GU patients	146	46	31.5	GU	1988	Culture
106	USA (Seattle)	North America	Urethral gonnorhea patients	122	45	37	Gu	1978	Culture
100	Scotland	Europe	Male gonococcal urethritis patients	62	17	28	GU	1981	Culture
26	USA (Texas)	North America	Infertile	79	22	28	Infertility	1993	Culture
8	Iran	Middle East	Infertile men	100	12	12	Infertility	2007	PCR
11	Nigeria	Africa	Infertile women	17	6	35.3	Infertility	2008	PCR
14	China (Nanjing)	Asia	Infertile men	202	68	33.7	Infertility	2008	Culture
29	China (Hunan)	Asia	Infertile people	768	281	36.59	Infertility	1998	Culture
30	Turkey	Middle East	Infertile women	50	28	56	Infertility	2002	Culture
36	Spain	Europe	Infertile people	374	88	23.5	Infertility	2001	Culture
43	USA (Texas)	North America	Infertile women	80	4	5	Infertility	1993	Culture
48	Argentina	South America	Sterile/infertile women	198	34	17.2	Infertility	1992	Culture
56	France	Europe	Infe#rtile couples-males	306	98	32	Infertility	1991	Culture

Abbreviations used: UG: urogenital; UTI: urinary tract infection; STI: sexually transmitted infection; GID: genital inflammatory disease; NGU: nongonococcal urethritis; GU: gonococcal urethritis; PGU: postgonococcal urethritis; PCR: polymerase chain reaction; PID: pelvic inflammatory disease; LSC: low sperm count; BV: bacterial vaginosis; VD: venereal disease; PTL: preterm labor; PRM: premature rupture of membranes; LBW: low birth weight; CLD: chronic lung disease; APO: adverse pregnancy outcomes; MSM: men having sex with men; CI: cervical insufficiency; HPV: human papilloma virus.

Table S5. Rates of all species in cases of urethritis.

Study number	Location	Continent	Population	Total tested	#MG positive	MG %	Presentation	Year	Diagnostic method
131	Norway	Europe	Female STI clinic patients	7646	344	4.50%	LGTI, urethritis	2009	PCR
1	USA (Seattle)	North America	Men STI clinic	370	46	12.50%	NGU	2011	PCR
17	China (Hong Kong)	Asia	Male STI clinic patients	36	5	13.90%	NGU	2007	PCR
120	Brazil	South America	HIV-men with NGU	110	10	9.10%	NGU	2000	Culture—>PCR/RFLP
149	Central African Republic	Africa	Asymptomatic men	100	15	15%	NGU	2001	PCR
156	USA	North America	Asymptomatic controls	125	5	4%	NGU	2001	PCR
157	USA (New Orleans)	North America	Asymptomatic controls	184	13	7%	NGU	2002	PCR
158	Venezuela	South America	Asymptomatic controls	172	7	4.10%	NGU	2008	PCR
117	Japan	Asia	Men with GU	45	2	4.40%	Postgonococcal urethritis	1996	PCR
16	Palestine	Middle East	Sterile pyuria patients	200	6	3%	Pyuria	2008	PCR
136	West Africa (7 Countries)	Africa	Male urethritis Patients	659	66	10%	Urethral discharge	2001	PCR
2	Japan	Asia	Male urethritis patients	178	32	18%	Urethritis	2011	PCR
116	USA (Balti-more)	North America	Men at STI clinics	153	34	22.20%	Urethritis	2009	PCR
122	Sweden	Europe	Men at STI clinics	451	27	6%	Urethritis	2005	PCR
140	Japan	Asia	Male GU patients	75	3	4%	Urethritis	2000	PCR
140	Japan	Asia	Male NGU patients	76	10	13.10%	Urethritis	2000	PCR
141	Sweden	Europe	Male STI Clinic patients	50	5	10.00%	Urethritis	2000	PCR
159	China	Asia	Asymptomatic controls	238	5	2.10%	Urethritis	2008	PCR
160	South Africa	Africa	NGU patients	96	16	16.70%	Urethritis	2002	PCR
161	New Zealand	Australia	Asymptomatic	199	4	2%	Urethritis	2010	PCR
162	Italy	Europe	Asymptomatic	23	1	4.30%	Urethritis	1999	PCR
163	South Africa	Africa	Asymptomatic	100	3	3%	Urethritis	2004	PCR
164	South Africa	Africa	Urethritis patients	665	115	17.30%	Urethritis	2010	TMA assay
165	Russia	Asia	Asymptomatic	30	3	10%	Urethritis	2009	PCR
122	Sweden	Europe	Women at STI clinics	283	18	6.30%	Urethritis, cervicitis	2005	PCR
Study number	**Location**	**Continent**	**Population**	**Total tested**	**#MH positive**	**MH %**	**Presentation**	**Year**	**Diagnostic method**
2	Japan	Asia	Male urethritis patients	176	21	12%	Urethritis	2011	PCR
51	Czech Republic	Europe	Male urethritis patients	150	28	18.70%	Urethritis	1992	Culture
76	USA (MT)	North America	Rural population	2408	96	4%	Urethritis	1987	Culture
33	Mexico	North America	Primary care UTI patients	436	9	2%	UTI	2002	Culture

Continued

16	Palestine	Middle East	Sterile pyuria patients	200	2	1%	Pyuria	2008	PCR
4	Serbia	Europe	HeS men	299	24	8.02%	NGU	2010	Mycoplasma IST Assay
32	Israel	Middle East	Male STI clinic patients	71	9	13.20%	NGU	1996	Culture
65	Croatia	Europe	Urethritis patients	184	26	14.13%	NGU	1989	Culture
71	Greece	Europe	Urethritis patients	237	67	28.14%	NGU	1988	Culture
78	Germany	Europe	Male urethritis patients	169	8	4.70%	NGU	1987	Culture
120	Brazil	South America	HIV-Men w NGU	110	1	0.90%	Ngu	2000	Culture—>PCR/RFLP
156	USA	North America	NGU patients	106	7	7%	NGU	2001	PCR
95	Germany	Europe	Male GU patients	143	19	13%	GU	1983	Culture
Study number	**Location**	**Continent**	**Population**	**Total tested**	**#Usp positive**	**Usp %**	**Presentation**	**Year**	**Diagnostic method**
53	Japan	Asia	GU patients	146	46	31.50%	GU	1988	Culture
106	USA (Seattle)	North America	GU patients	121	45	37%	GU	1978	Culture
100	Scotland	Europe	Male GU patients	62	17	28%	GU	1981	Culture
95	Germany	Europe	Male GU patients	143	49	34%	GU	1983	Culture
99	Australia	Australia	Pregnant women with bacteria	44	21	48%	Bacturia	1981	Culture
1	USA (Seattle)	North America	Male STI clinic patients	370	89	24%	NGU	2011	PCR
4	Serbia	Europe	HeS men	299	63	21.08%	NGU	2010	Mycoplasma IST assay
17	China (Hong Kong)	Asia	Male STI clinic patients	44	10	22.80%	NGU	2007	PCR
32	Israel	Middle East	Male STI clinic patients	71	32	45.60%	NGU	1996	Culture
53	Japan	Asia	NGU patients	334	113	33.80%	NGU	1988	Culture
61	India	Asia	Male urethritis patients	804	129	16.10%	NGU	1989	Culture
65	Croatia	Europe	Urethritis patients	184	86	46.74%	NGU	1989	Culture
71	Greece	Europe	Female urethritis patients	237	91	38.41%	NGU	1988	Culture
75	Germany	Europe	Male urethritis patients	333	50	15%	NGU	1988	Culture
78	Germany	Europe	Male urethritis patients	169	46	27.20%	NGU	1987	Culture
98	UK	Europe	Male NGU patients	221	95	43%	NGU	1981	Culture
100	Scotland	Europe	Male urethritis patients	147	79	53.80%	NGU	1981	Culture
120	Brazil	South America	HIV-men w NGU	110	15	13.60%	NGU	2000	Culture—>PCR/RFLP
149	Central African Republic	Africa	Male urethritis patients	381	168	44.10%	NGU	2001	PCR
156	USA	North America	NGU patients	121	51	42%	NGU	2001	PCR
16	Palestine	Middle East	Sterile pyuria Patients	200	10	5%	Pyuria	2008	PCR

Continued

144	Malaysia	Asia	Male STI clinic	100	34	34%	PGU, NGU	2003	Culture
2	Japan	Asia	Male urethritis patients	176	21	12%	Urethritis	2011	PCR
51	Czech Republic	Europe	Male urethritis patients	150	73	48.70%	Urethritis	1992	Culture
55	Spain (Seville)	Europe	MSM	40	5	12.50%	Urethritis	1991	Culture
58	France (Toulouse)	Europe	Male urethritis patients	225	46	20.40%	Urethritis	1991	Culture
76	USA (MT)	North America	Rural population	2408	650	27%	Urethritis	1987	Culture
107	Germany	Europe	Male NGU patients	99	42	42%	Urethritis	1997	Culture
107	Germany	Europe	Male NGU patients	67	36	53%	Urethritis	1977	Culture
146	Thailand	Asia	Male urethritis patients	303	136	45%	Urethritis	1989	Culture
153	India	Asia	GTI-urethritis	356	171	48%	Urethritis	2008	PCR
155	USA	North America	Urethritis patients	119	31	26%	Urethritis	2010	PCR
159	China	Asia	Urethritis patients	100	22	22.10%	Urethritis	2008	PCR
163	South Africa	Africa	NGU patients	336	121	36%	Urethritis	2004	PCR
152	Nigeria	Africa	Vaginal discharge/ inflammation	17	10	59%	Urethritis/BV	2008	PCR
12	UK	Europe	Women w/UTI	288	75	26%	UTI	2008	Culture
33	Mexico	North America	UTI patients	436	26	5.90%	UTI	2002	Culture
151	Egypt	Africa	Men with struvite stones	30	8	26.70%	Struvite formation	1996	Culture

Abbreviations: UG: urogenital; GTI: genital tract infection; UTI: urinary tract infections; STI: sexually transmitted infection; NGU: nongonococcal urethritis; GU: gonococcal urethritis; PGU: postgonococcal urethritis; PCR: polymerase chain reaction; PID: pelvic inflammatory disease; LSC: low sperm count; ASM: abnormal sperm morphology; LGTI: lower gential tract; BV: bacterial vaginosis; VD: venereal disease; PTL: preterm labor; INF: infertility; INFL: inflammatory conditions (*i.e.*, bacterial vaginosis, cervicitis, pelvic inflammatory disease); PC: prostate cancer; LBW/CLD: low birth weight and/or chronic lung disease of infants; ND: no description of specific clinical signs while being distinguished from asymptomatic patients; Hes: Heterosexual; RFLP: restriction fragment length polymorphism.

Table S6. Rates of all species in cases of preterm labor and adverse pregnancy outcomes.

Study number	Location	Continent	Population	Total tested	#Positive	MG %	Presentation	Year	Diagnostic method
112	Peru	South America	Pregnant women	650	13	2%	Preterm labor	2010	PCR
Study number	**Location**	**Continent**	**Population**	**Total tested**	**#Positive**	**MH%**	**Presentation**	**Year**	**Diagnostic method**
89	Japan	Asia	Pregnant women	88.23529	15	17%	Preterm labor	1986	Culture
169	Sweden	Europe	Pregnant women	37.46398	13	34.70%	Preterm labor	2003	Culture
Study number	**Location**	**Continent**	**Population**	**Total tested**	**#Positive**	**Usp%**	**Presentation**	**Year**	**Diagnostic method**
50	France	Europe	Pregnant women	191	103.14	54%	Preterm labor	1992	Culture
89	Japan	Asia	Pregnant women	90	72	80%	Preterm labor	1986	Culture
15	Czech Republic	Europe	Pregnant women	75	72	96%	PTL/PRM	2008	Culture
81	Belgium	Europe	Recurrent miscarriage	76	49.02	64.50%	Recurrent miscarriage	1987	Culture
81	Belgium	Europe	Miscarriage	122.0075	65.03	53.30%	Miscarriage	1987	Culture
82	Canada	North America	Spontaneous abortion	264	63.36	24%	Miscarriage	1986	Culture
9	Canada (Quebec)	North America	Pregnant women (Cl)	15.15152	5	33%	Cervical insufficiency	2008	PCR
68	France	Europe	Pregnant women chorioamnionitis	160	68.8	43%	Chorioamnionitis	1989	Cutlure
96	Canada (Toronto)	North America	Miscarriage	71	59.995	84.50%	APO	1983	Serology

Abbreviations used: PTL: preterm labor; PRM: premature rupture of membranes; APO: adverse pregnancy outcomes.

Table S7. Rates of all species in cases of infertility.

Study number	Location	Continent	Population	Total tested	#Positive	MG%	Presentation	Year	Diagnostic method
20	Tunisia	Africa	Infertile men	120	6	5%	Infertility	2009	PCR
129	Poland	Europe	Infertile women	51	10	19.60%	Infertility	2008	PCR
135	Denmark	Europe	Infertile women	132	29	22%	Infertility	2000	Serology
Study number	**Location**	**Continent**	**Population**	**Total tested**	**#Positive**	**MH%**	**Presentation**	**Year**	**Diagnostic method**
26*	USA (Texas)	North America	Infertile	80	4	5%	Infertility	1993	Culture
30	Turkey	Middle East	Infertile women	50	4	8%	Infertility	2002	Culture
36	Spain	Europe	Infertile people	375	18	4.80%	Infertility	2001	Culture
43	USA (Texas)	North America	Infertile women	79	22	28%	Infertility	1993	Culture
145	Russia	Asia	Infertile couples	148	25	16.90%	Infertility	2000	PCR
13	Tunisia	Africa	Infertile men	116	12	10.30%	Infertility, lukocytospermia	2008	PCR
45	Chile	South America	Infertile women	47	10	21%	Infertility	1993	Culture
20	Tunisia	Africa	Infertile men	120	13	10.80%	LSC, ASM	2007	PCR
92	Italy	Europe	Infertile men	115	3	2.60%	Infertility	1984	Culture
Study number	**Location**	**Continent**	**Population**	**Total tested**	**#Positive**	**Usp%**	**Presentation**	**Year**	**Diagnostic method**
92	Italy	Europe	Infertile men	116	49	42.20%	Bacteriospermia, infertility	1984	Culture
20	Tunisia	Africa	Infertile men	120	18	15%	LSC, ASM	2007	PCR
88	Netherlands	Europe	Infertile Men	121	40	33%	LSC, ASM	1986	Culture
26*	USA (Texas)	North America	Infertile	80	22	28%	Infertile	1993	Culture
8	Iran	Middle East	Infertile men	100	12	12%	Infertility	2007	PCR
11	Nigeria	Africa	Infertile women	17	6	35.30%	Infertility	2008	PCR
14	China (Nanjing)	Asia	Infertile men	202	68	33.70%	Infertility	2008	Culture
29	China (Hunan)	Asia	Infertile people	768	281	36.59%	Infertility	1998	Culture
30	Turkey	Middle East	Infertile women	50	28	56%	Infertility	2002	Culture
36	Spain	Europe	Infertile people	374	88	23.50%	Infertility	2001	Culture
43	USA (Texas)	North America	Infertile women	79	4	5%	Infertility	1993	Culture
48	Argentina	South America	Infertile women	198	34	17.20%	Infertility	1992	Culture
56	France	Europe	Infertile couples-males	306	98	32.00%	Infertility	1991	Culture
56	France	Europe	Infertile couples (at least one partner)	306	129	42.00%	Infertility	1991	Culture
145	Russia	Asia	Infertile couples	246	96	39%	Infertility	2000	PCR
152	Nigeria	Africa	Infertile women	17	6	35%	Infertility	2008	PCR
13	Tunisia	Africa	Infertile men	116	18	15.50%	Infertility, Lukocytospermia	2008	PCR
45	Chile	South America	Infertile women	47	22	47%	Infertility	1993	Culture
24	China (Hunan)	Asia	Infertile men	789	281	35.60%	Infertility	1998	Culture

Abbreviations used: LSC: low sperm count; ASM: Abnormal sperm morphology.

Table S8. Rates of all species in cases of genital inflammation including bacterial vaginosis, cervicitis, pelvic inflammatory disease, and nonspecific inflammatory conditions.

Study number	Location	Continent	Population	Total tested	#Positive	MG%	Presentation	Year	Diagnostic method
115	USA (Baltimore)	North America	Women at STI clinics	324	93	28.60%	Cervicitis	2009	PCR
139	Japan	Asia	Women with cervicitis/ adnexitis	103	7	6.80%	cervicitis/ adnexitis	1997	PCR
133	UK	Europe	PID Patients	46	6	13%	PID	2003	PCR
114	Sweden	Europe	Pregnant women-induced abortion	1960	49	2.50%	Post-term PID	2007	PCR
Study number	**Location**	**Continent**	**Population**	**Total tested**	**#Positive**	**MH%**	**Presentation**	**Year**	**Diagnostic method**
64	Coatia	Europe	13-19 year olds	126	18	14.30%	Relapsing Cervicitis	1989	Culture
28	India (Bombay)	Asia	BV patients	327	35	10.70%	BV	1990	Culture
143	Ivory Coast	Africa	Pregnant women	551	281	51%	BV	2000	Culture
148	UK	Europe	Women with BV	17	9	53%	BV	2000	PCR
90	Denmark	Europe	Female partners of male NGU Patients	85	31	36%	Cervicitis, urethritis	1985	Culture
147	Brazil	South America	Women with UG signs	77	4	5%	Cervicitis/salpingitis	1987	Culture
150	Kenya	Africa	Postpartum edomertritis	35	19	53%	Endometritis (postpartum)	1988	Culture
37	Argentina	South America	Pregnant women with BV	198	28	14.10%	Genital Discharge	2001	Culture
170	Kenya/ South Africa/ Swaziland	Africa	Men with UG lesions	256	41	16%	Genital Ulceration	1983	Culture
170	South Africa	Africa	Men with UG lesions	0	0	16%	Genital Ulceration	1983	Culture
170	Swaziland	Africa	Men with UG lesions	0	0	16%	Genital Ulceration	1983	Culture
47	China	Asia	"VD" Patients	239	10	4.18%	"VD"	1990	Serology
Study number	**Location**	**Continent**	**Population**	**Total tested**	**#Positive**	**Usp%**	**Presentation**	**Year**	**Diagnostic method**
3	Turkey	Middle East	Pregnant women	96	25	26%	Subclinical cervical infection	2010	PCR
64	Croatia	Europe	13 - 19 years old	126	38	30.20%	Relapsing cervicitis	1989	Culture
28	India (Bombay)	Asia	BV patients	325	151	46.50%	BV	1990	Culture
148	UK	Europe	Women with BV	17	11	65%	BV	2000	PCR
44	Poland	Europe	Cervical neoplasia patients	109	44	40.50%	Cervical Neoplasia (HPV+)	1993	Culture
48	Argentina	South America	Active women	100	4	4.00%	Cervicitis	1992	Culture
147	Brazil	South America	Women with UG signs	51	30	58.50%	Cervicitis/ salpingitis	1987	Culture
67	Mexico	North America	Non-pregnant women	129	16	12.40%	Cervicovaginitis	1989	Culture
67	Mexico	North America	Pregnant women	105	21	20.00%	Cervicovaginitis	1989	Culture
150	Kenya	Africa	Postpartum endometritis	30	23	77%	Endometritus	1988	Culture
10	USA (13 sites)	North America	Women with PID	50	16	32%	Endometritis, PID, BV	2009	PCR
37	Argentina	South America	Pregnant women with BV	198	58	29.50%	Genital Discharge	2001	Culture
44	Poland	Europe	PID patients	52	29	55.60%	Genital Inflammatory Disease	1993	Culture
47	China	Asia	"VD" patients	239	42	17.57%	"VD"	1990	Serology

Abbreviations: UG: urogenital; STI: sexually transmitted infection; PCR: polymerase chain reaction; PID: pelvic inflammatory disease; BV: bacterial vaginosis; VD: venereal disease.

