Travel as a risk factor for chlamydia among thirty-two thousand young heterosexual international travellers visiting Melbourne, Australia, 2007-2017

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BACKGROUND

- Travel is a risk factor for acquiring sexually transmitted infections (STIs).
- There are few data examining the difference in STI rates between travellers and local residents.
- One previous Australian study reported a higher chlamydia prevalence among backpackers (7%) compared to residents (6%) in 2006 ($p<0.001$)(1).
- The aim of the study is to examine chlamydia positivity and risk factors among young heterosexual male and female international travellers compared to residents attending a sexual health clinic in Melbourne using a large retrospective dataset.

METHODS

- Retrospective study of heterosexual male and female patients aged under 30 attending Melbourne Sexual Health Centre (MSHC) from January, 2007 to February, 2017.
- Travellers defined as: born outside Australia and present in Australia <2 years.
- Residents defined as: born in Australia or overseas-born and living in Australia for >5 years.
- C. trachomatis* was detected using the Aptima Combo 2 assay.
- We examined characteristics associated with chlamydia positivity by multivariable analysis.

RESULTS

- A total of 32,142 travellers (14,172 men and 17,970 women) and 23,698 residents (12,567 men and 11,131) women were included in the study.
- Male travellers (12.1%, 95%CI: 11.6-12.7) had higher chlamydia positivity than male residents (9.3%, 95% CI: 8.8-9.9) ($p<0.001$). Similar findings were observed for females (travellers:10.4%, 95%CI: 10.0-10.9 vs residents: 7.7%, 95%CI: 7.1-8.2%) ($p<0.001$).

REFERENCES

- McNulty AM, et al The behaviour and sexual health of young international travellers (backpackers) in Australia STI 2010;86:247-250.
- Australia's Working Holiday Maker program: a quick guide – Parliament of Australia (2016). Cited 28.05.2018. Available from http://parlinfo.aph.gov.au/parlinfo/download/library/prspub/4645762/upload_binary/4645762.pdf

RESULTS

Table 1. Top 5-countries with highest chlamydia positivity among travellers

Country	Male				Female			
	Positive tests	Total chlamydia tests	Positivity by country (%)	Proportion of positive tests in the study (%)	Positive tests	Total Chlamydia tests	Positivity by country (%)	Proportion of positive tests in the study (%)
New Zealand	114	704	16.2	7.7	72	798	9	4.3
UK	509	3581	14.2	34.2	435	4114	10.6	25.9
Ireland	158	1270	12.4	10.6	109	1196	10.7	10.8
France	77	586	13.1	5.2	83	779	10.7	4.9
Germany	30	349	12	2.0	67	508	13.2	4.0
China	51	558	9.1	3.1	98	711	13.8	5.8

Figure 1. Chlamydia positivity by traveller status

Figure 2: Chlamydia diagnoses by year and traveller status

Table 2. Multivariable analysis of chlamydia positivity and risk factors

Characteristics	Male (N=26,739)		Female (N=29,101)	
	Frequency	AOR (95%CI, p-value)	Frequency	AOR (95%CI, p-value)
Known contacts				
Yes	1,785	9.5 (8.4-10.8, $p<0.001$)	1,309	7.1 (6.2-8.1, $p<0.001$)
No	21,785	1 (ref)	24,521	1 (ref)
Travellers				
Yes	12,657	1.4 (1.2-1.5, $p<0.001$)	16,129	1.4 (1.3-1.5, $p<0.001$)
No	10,913	1 (ref)	9,701	1 (ref)
Age				
≤20	2,028	1.3 (1.1-1.5, $p=0.008$)	3,603	2.0 (1.7-2.3, $p<0.001$)
21-25	11,765	1.4 (1.3-1.6, $p<0.001$)	13,863	1.5 (1.3-1.6, $p<0.001$)
26-30	9,777	1 (ref)	8,364	1 (ref)
Number of partners in last 12 months				
≤3	11,063	1 (ref)	15,502	1 (ref)
≥4	12,507	1.6 (1.4-1.8, $p<0.001$)	10,328	1.4 (1.3-1.5, $p<0.001$)
Condom use in last 12 months				
Inconsistent	18,506	2.7 (2.2-3.2, $p<0.001$)	20,722	2.0 (1.7-2.4, $p<0.001$)
Always or non-penetrative sex	3,721	1 (ref)	3,401	1 (ref)
Genital symptoms				
Yes	8,111	2.8 (2.6-3.1, $p<0.001$)	11,410	1.2 (1.0-1.3, $p=0.004$)
No	15,459	1 (ref)	14,420	1 (ref)
Sex overseas in last 12 months				
Yes	11,117	1.0 (0.9-1.1, $p=0.3$)	11,624	1.1 (1.0-1.2, $p=0.02$)
No	11,301	1 (ref)	13,021	1 (ref)

CONCLUSIONS

- The risk factors for chlamydia positivity among heterosexuals included: young age (≤ 25), inconsistent condom use, being a contact of a chlamydia infected partner, sex overseas, a higher number of recent sexual partners, and presentations with genital symptoms.
- Being a traveller was an independent risk factor for acquiring chlamydia infection for men and women.
- Access to STI testing for travellers in Australia, who face barriers such as cost, is likely to be important in maximizing treatment to prevent onward transmission of chlamydia.