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JOURNAL CLUB
SEXUALLY TRANSMITTED
INFECTIONS

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SYPHILITIC HEPATITIS AND NEUROSYPHILIS: AN OBSERVATIONAL STUDY OF DANISH HIV-INFECTED
INDIVIDUALS DURING A 13-YEAR PERIOD
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LEA KATZENSTEIN4

Sexually Transmitted Infections 2019; 95: 416-418

Background

- Syphilis described as the "great imitator", if untreated can potentially affect any organ including the liver
- Estimated that 3% of secondary syphilis cases can present as syphilitic hepatitis
- However been reported in early stages of syphilis in both HIV negative & HIV positive individuals
- Neurosyphilis can occur during all stages of syphilis
- People with HIV thought to be at increased risk of developing neurological complications

Aim of study

- The aim of this study was to investigate syphilitic hepatitis and neurosyphilis among HIV-infected individuals during a 13-year period

Methods Study population



HIV-infected individuals ≥ 18 years diagnosed with syphilis between 1 May 2004 and 31 December 2016



Data collected from 3 clinics in Copenhagen, Denmark



Linked data from the Danish National Syphilis Registration system & Danish National HIV Registration System



Linked with unique 10 digit personal pin



Also reviewed patients with positive syphilis serology not notified to the registration system

Methods Data collected on:

Sociodemographic info

Mode of acquisition

Stage of syphilis

Neurological symptoms

Treatment of syphilis

Any previous syphilis infection

Serological data

HIV viral load

CD4count

ARV's

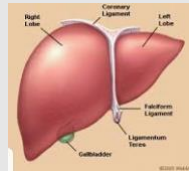
Hep B & C status (B surface ab/C ab)

Concurrent STI's

Methods

Definitions:

- Successful treatment – 4 fold decrease in RPR titre
- Neurosyphilis defined as seroreactivity in CSF or elevated CSF cell count
- Syphilitic hepatitis defined as
 - Serological confirmed syphilis
 - Increased levels of: ALP, ALT, AST or LDH
 - Exclusion of other causes of hepatitis



Results

Baseline characteristics

509 episodes of syphilis

427 individuals

99.5% men – 96% MSM

Median CD cell count 522

73% on ARV's

69% HIV VL <200 copies/ml

Results Neurosyphilis

- 27 patients (6%) met criteria
- Majority diagnosed in secondary stage – 84%
- Early latent – 8%
- Late latent – 8%
- 14 patients had a lumbar puncture but did not meet criteria

Results Syphilitic Hepatitis (SH)

- 62 (15%) patients met criteria SH
- 26% of patients w. syphilis seen at the STI clinic not included since no LFT's
- 13 patients excluded positive Hep B Sag
- 20 excluded positive Hep C ab
- Majority diagnosed in secondary stage – 82%
- Nil patients had clinical signs of hepatitis
- Liver parameters normalised post treatment

Discussion



- Neurosyphilis uncommon
- Majority diagnosed in secondary stage
- Low prevalence of SH
- Majority diagnosed in secondary stage
- Additionally excluded patients with liver abnormalities because of viral hepatitis,
- This can contribute to underestimation of SH

Discussion continued:

Limitations

- Retrospective design
- Small number of patients with neurosyphilis
- Only included HIV positive individuals
- Data on those that met criteria for SH not accurate
- ¼ of Patients overall from STI clinic not included – no data on LFT's

Discussion continued:

Strengths

- Unique pin assigned to all individuals allows all patients to be linked
- Data included all patients diagnosed with syphilis in Copenhagen
- Included all patients diagnosed during a 12 year period

In summary:

- SH should be considered as a diagnosis in those with liver abnormalities
- Development of mass lesions in the liver has been described in patients with tertiary syphilis
- Important to identify patients with neurosyphilis since require extended treatment

CASE REPORT:

- 37 year old HIV positive male on ARV's
- 1 month history painful ulcer on tongue
- UDVL, CD4 count 834 cells

Physical examination revealed:

- 1cm painful round ulcer with raised & well defined borders
- Painful submandibular lymphadenopathy

Swabs from ulcer, rectum & pharynx tested for:

- *Treponema pallidum*
- *Haemophilus ducreyi* (HD) & *Chlamydia trachomatis* L-serovar



Lymphogranuloma venereum presenting as an ulcer on the tongue

José Riera-Monroig, Irene Fuertes de Vega

Sexually transmitted Infections 2019, 95: 169-170

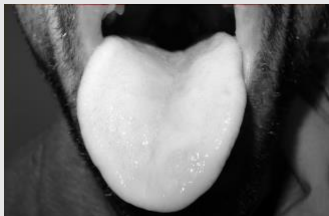


Figure 1 One-centimetre round ulcer with raised and well-defined borders with a fibrinous bed on the dorsal face of the tongue.

Lymphogranuloma venereum presenting as an ulcer on the tongue Continued

- Tested positive to LGV in all sites
- Negative Hep C ab & non-treponemal test
- Treated with course of doxycycline for 3 weeks
- Rapid reduction in ulcerative lesion & enlarged lymphadenopathy
- TOC from pharynx and rectum 2 weeks post treatment – negative



Lymphogranuloma venereum presenting as an ulcer on the tongue
Discussion:

- The pharynx could be a potential reservoir for CT-LGV
- Most reported cases of pharyngeal LGV are subclinical
- There have been few cases of cervical enlarged lymphadenopathy & buboes published
- Only one case had thorough description of ulcer, similar to this case – literature review
- ?CT- L serovar may cause ulcers in oral mucosa similar to the rectum/perianal regions
- Prevalence of pharyngeal LGV appears to be very low
- HIV infection could facilitate LGV infection



CHOOSE TO TEST: SELF-SELECTED TESTING FOR
SEXUALLY TRANSMITTED INFECTIONS WITHIN AN
ONLINE SERVICE

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BARAITSER

2019;95:171–174

Background

- E-Health care offers new opportunities for self management outside clinical contexts
- Testing for STI's increasingly accessible online
- A more individually tailored & user selected package of testing may be more appropriate for those at lower risk
- A "choose to test" service was developed and piloted in Essex – www.sh24.org.uk
- Service used an algorithm based on public health data comparing risk of STI's in different populations
- Invited users to modify this selection



Aim of study

- To describe user choice following the implementation of the "choose to test" intervention and it investigate its effect on STI test orders and diagnoses. This will inform providers, researchers, policy makers about the impacts of introducing choice of tests to online provided STI testing

Methods

- Collected data before introduction during period of 1 May 2016 – 29 Oct 2016
- Data collected post implementation: period from 30 Oct 2016 – 30 Apr 2017

Each record included info on:

- User demographics
- Date of test
- Testing package offered
- Testing package chosen
- Test results

Table 1 Algorithm for offering different packages of tests for the three population groups: non-men who have sex with men (MSM)/ non-black and ethnic minority (BME); BME; MSM

	Non-MSM/non-BME	BME	MSM
Genital chlamydia/gonorrhoea	Yes	Yes	Yes
Oral chlamydia/gonorrhoea	No	No	Yes
Rectal chlamydia/gonorrhoea	No	No	Yes
Syphilis	No	No	Yes
HIV	No	Yes	Yes

Methods continued:

Users response to the "chose to test" was studied measuring:

- Modification of testing package recommended
- Number of views of additional info provided
- Total costs of the tests provided
- Number of infections diagnosed

Results

- Before introduction of chose to test – 7550 orders from 6253 users
- After implementation 9785 orders from 7772 users
- 93% orders from asymptomatic users
- 27% reported condomless sex in 3 days prior to testing
- Those who identified as MSM – 17.2% chose to remove tests
- Users only offered CT and GC testing – 60% chose to add HIV/Syphilis
- BME but non MSM – 67% added syphilis since not included

Table 2: Differences in users demographics for pre-choice of test period vs choice of test period

	Pre-choice of test period		Choice of test period		P value
	n	%	n	%	
All	6253		7772		
Female	4030	64.4%	4968	63.9%	0.52
16-24	3351	53.6%	4120	53%	0.49
BME	642	10.3%	878	11.3%	0.05
MSM	367	5.9%	530	6.8%	0.02
IMD					
Most Deprived	580	9.3%	794	10.2%	0.02
2	1364	21.8%	1705	22%	
3	1399	22.4%	1847	23.8%	
4	1614	25.8%	1886	24.3%	
Least deprived	1296	20.7%	1528	19.7%	

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Least deprived	1296	20.7%	1528	19.7%	

	Pre-'choose to test'		'Choose to test' period		P value
	n	%	n	%	
All	7550		9785		
Female	4954	65.60%	6386	65.30%	0.63
16-24	4127	54.70%	5316	54.30%	0.34
BME	783	10.40%	1094	11.20%	0.08
MSM	463	6.10%	692	7.10%	0.008
Chlamydia positives*	358	6.20%	433	5.90%	0.57
Gonorrhoea positivity*	29	0.50%	39	0.50%	0.79
HIV positives†	<5	–	<5	–	
Syphilis positives†	<5	–	<5	–	

*Chlamydia and gonorrhoea positivity calculated to include returned and viable samples only.

Table 3

◦ Differences in orders by demographics & positivity before & after introduction of "chose to test"

	Choose default test package		Modify test package		P value	OR (95% CI)	AOR (95% CI)*
	N	n (%)	n (%)	n (%)			
All	9785	3472	6313				
Female	6386	2141 (61.7%)	4245 (67.2%)		<0.001	1.28 (1.17 to 1.39)	1.24 (1.12 to 1.38)
16-24	5316	2041 (58.8%)	3275 (51.9%)		<0.001	0.76 (0.69 to 0.82)	0.72 (0.66 to 0.79)
MSM	692	573 (16.5%)	119 (1.9%)		<0.001	0.1 (0.08 to 0.12)	0.07 (0.05 to 0.08)
BME	1094	155 (4.5%)	939 (14.9%)		<0.001	3.74 (3.14 to 4.46)	4.65 (3.84 to 5.64)
IMD quintiles†							
Most deprived quintile 1	1083	428 (12.3%)	655 (10.4%)		0.002	0.78 (0.67 to 0.91)	0.81 (0.7 to 1.0)
2	2172	747 (21.6%)	1425 (22.6%)		0.70	0.975 (0.85 to 1.11)	0.92 (0.8 to 1.06)
3	2276	795 (22.9%)	1481 (23.5%)		0.46	0.95 (0.84 to 1.08)	0.95 (0.86 to 1.07)
4	2400	874 (25.2%)	1526 (24.2%)		0.08	0.89 (0.79 to 1.01)	0.86 (0.76 to 0.99)
Least deprived quintile 5	1839	622 (17.9%)	1217 (19.3%)		–	–	–
Symptomatic	684	322 (9.3%)	362 (5.7%)		<0.001	0.59 (0.51 to 0.7)	0.54 (0.46 to 0.63)
UPI in last 3 days†	2702	994 (28.6%)	1708 (27.1%)		0.1	0.92 (0.84 to 1.01)	–
Never used a clinic before	3455	1221 (35.2%)	2234 (35.4%)		0.83	1.01 (0.93 to 1.10)	–

*Adjusted ORs (lower and upper CIs), adjusted for all other variables significantly associated (p<0.05) in univariate analysis.

†Index of multi-deprivation quintiles for England.

‡Unprotected sexual incident in last 3 days.

BME, black and ethnic minority; MSM, men who have sex with men.

Table 4

◦ Characteristics of users after implementation who chose to modify their test package and those who did not

	N	Choose default test package		Modify test package		P value	OR (95% CI)	AOR (95% CI)*
		n (%)	n (%)	n (%)	n (%)			
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†Index of multi-deprivation quintiles for England.

‡Unprotected sexual incident in last 3 days.

BME, black and ethnic minority; MSM, men who have sex with men.

Results

- Overall total reduction in orders of 3083 blood test kits between 2 study periods – 31%
- Reduction in orders for CT/GC tests among MSM users
- Some users chose to not test from some sites – rectal kits reduced by 10%
- Only 20% of users accessed info on the test kits



Discussion

Orders increased over time

Users tended to choose more tests

Small number of HIV and syphilis diagnoses

Some MSM chose not to test from certain sites – potential to miss infections

Intervention was cost saving

However did not account for potential missed HIV diagnoses

Most users chose not to access the info available

In summary

- Where testing choices are provided majority of users will choose tests for HIV, syphilis, CT and GC as recommended
- Providing users with choice of tests online does not significantly affect the number of CT and GC diagnoses
- User led decision making on choice of tests can be cost saving by reducing blood tests
- But cost implications of possible missed HIV diagnoses is unknown
- Further work is required