Sexually Transmitted Infections in Men Who Have Sex with Men

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Gay rights globally

Sexual orientation choice or immutable?

• Justifications of laws against same-sex relationships:
  – Unlike sex or race, same-sex orientation is chosen rather than biological
  – Same-sex orientation is forced onto people by homosexual ‘recruiters’, (e.g. by molestation)

• 5% of gay men and 16% of lesbians felt they had a fair amount or a good deal of choice (Herek et al., 2010).

• Most heterosexuals also feel they have no choice, and also report having ‘noticed’ or discovered their opposite-sex attraction at a relatively early age (McClintock and Herdt, 1996).

MSM and STI an overview

• Epidemiology and identity
  – STI prevalence and risk behaviour
  – STI networks
  – Gender, identity and orientation

• Disease specific topics
  – Lymphogranuloma venereum
  – Hepatitis C
  – Anal carcinoma
  – Meningitis C
  – HIV

• Concluding remarks

Early syphilis positivity, STI outpatient clinic Amsterdam, 1982-2014
Syphilis epidemics in Europe, 1998-2007

STD prevalence among asymptomatic HIV+ patients at academic HIV outpatient settings

Screened on chlamydia, gonorrhoea, syphilis, HBV and HCV during a routine visit

<table>
<thead>
<tr>
<th></th>
<th>heterosexual patients</th>
<th>MSM patients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 245</td>
<td>n = 669</td>
</tr>
<tr>
<td>Low STI positivity (1.6%)</td>
<td>1,6%</td>
<td>4,6%</td>
</tr>
<tr>
<td>1.2% chlamydia</td>
<td>1,2% chlamydia</td>
<td>1,2% chlamydia</td>
</tr>
<tr>
<td>0,4% syphilis</td>
<td>0,4% syphilis</td>
<td>0,4% syphilis</td>
</tr>
<tr>
<td>High risk behaviour was rare</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Heiligenberg M et al. AIDS 2012

Polydrug use (especially with methamphetamine) in HIV+ MSM is strongly associated with condomless sex

The ASTRA study

Male-male homosexual activity is a strong risk factor for STI

- Biological explanations (R0=b.c.D)
  - higher number of sex partners (casual sex)
  - exposure of highly receptive tissues for pathogen transmission like anorectal mucosa

- Sociological explanations
  - ignorance and myths around (the danger of) male-male sexual contact;
  - barrier protection not required for contraceptive reasons might lower condom use;
  - illegality, homophobia and stigmatization discourages stable relationships, and encourages, casual, fleeting, anonymous and opportunistic contacts;
  - increased use of disinhibiting substances.


Internet dating among MSM

- Mc Fairlane, JAMA 2000
  - STI clinic visitors Denver
  - Sex partners via internet
  - “Online seekers”
  - Overrepresentation of MSM
    - Multiple sex partners
  - New generation tools
    - mobile apps
    - geo spatial dating
    - “We don’t view this as a security flaw. It’s not a bug, it’s a feature!”

https://grindrmap.neocities.org

MSM, travel purposes & destinations


Heiligenberg M et al. AIDS 2012

Heiligenberg STD journal 2012
Homosexual male-male activity is common and as old as mankind

- Kinsey report 1970: at least 20.3% of adult men in the US had sexual contact to orgasm with another man at some time in their life
  - 6.7% over 19 years old
  - 1.6-2.0% within the previous year
- Approximately half the men with homosexual contacts were currently or previously married.

Identity as dimension of sexual orientation

- Personal identity
  - Self-defined
- Social (or collective) identity is a sense of membership in a social group based on a shared sexual orientation.
  - Being "gay" as a Western construct,
    - Can be less relevant elsewhere
  - Other sexual identities:
    - India: Hijras, Kothis and Panthis
    - Thailand and Laos: the Katoey
    - Cambodia: the Srya sros and Pros saat

Behaviour accounting for increased risk for STI not preference, desire or identity

- Direct enquiries into a persons’ sexual desires, orientation or identity can lead to (incorrect) socially acceptable responses.
- More appropriate in STI consultation to ask for sex partners: “Do you have sex with men and/or women?”
- Term MSM debated
  - Obscures social dimensions of sexuality;
  - Undermines self-labelling and empowerment of lesbian, gay, and bisexual people;
  - Does not sufficiently describe variations in sexual behaviour.

LGBTI poor access to healthcare and decreased help seeking behaviour

- Patient related factors:
  - Shame, guilt, low self-esteem
  - Fear of disapproval upon self-disclosure.
- Clinician related factors:
  - Discomfort with male-male sex,
  - Homophobia, judgemental and moralistic approach,
  - Irrational fear for contamination,
  - Ignorance about specific conditions in MSM,
  - Not obtaining swabs from correct body orifices.


Orientation vs Behaviour

- Attraction by the sex of one’s partners
- Romantic, emotional, affectionate and/or sexual
- Does not have to lead to behaviour or activity
- Many religions condemn homosexual activity, not the desire itself resulting in secrecy and in fear of rejection

- Refers to participation in sexual acts
- Under same-sex physical locations (mine compounds, military, incarceration)
- May have no impact on presumed heterosexual orientation
- Explicitly vulnerable and hard to reach (in the closet) population

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- Concluding remarks

Lymphogranuloma venereum

- C. trachomatis L1, L2, L3  (LGV genovar)
  - invasive organism
  - severe inflammation
  - usually symptomatic

- Endemic in equatorial regions

- Since 2003 among HIV+ MSM Western world
  - clonal outbreak L2b (Amsterdam variant)
  - Vast majority ano-rectal infections
  - Mode of transmission?

Strains within the LGV clade are considerably less diverse than those in the trachoma lineage

"Despite the global distribution, the L2b epidemic is a clonal outbreak that has spread throughout the world."

Retrospective HCV-incidence data

<table>
<thead>
<tr>
<th>First author</th>
<th>Country</th>
<th>Cohort</th>
<th>Timeframe</th>
<th>HCV-incidence (1000 PY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>van de Laar</td>
<td>Netherlands</td>
<td>MSM-cohort</td>
<td>1984-1989, 2000-2003</td>
<td>0.8, 8.3</td>
</tr>
<tr>
<td>Ghosn</td>
<td>France</td>
<td>HIV-cohort</td>
<td>&lt;2003, &gt;2003</td>
<td>1.2, 8.3</td>
</tr>
<tr>
<td>Stellbrink</td>
<td>Germany</td>
<td>HIV-cohort</td>
<td>2002-2003</td>
<td>3.6, 10.5</td>
</tr>
<tr>
<td>van der Heim</td>
<td>International</td>
<td>HIV-serocoverter cohort</td>
<td>1990, 2000, 2005</td>
<td>0.9-2.2, 5.5-8.1, 8.0-13.7</td>
</tr>
</tbody>
</table>

Table from van de Laar (2011) and van de Laar (2009) Gastroenterology

European HCV network

- One LARGE European transmission network of HCV genotypes 1 and 4

- Similar trees can be made for Hepatitis A and Hepatitis B

- Fear: Endemicity of viral hepatitis A, B and C in MSM in Europe.
Sexual factors for HCV infection

- Ulcerative STI (LGV, syphilis, herpes)
- Drug use (injection, disinhibition)
- Traumatic sexual practices (fisting, toys, groupsex, multiple partners)
- HIV
  - Reduced immunity
  - Increased HCV viremia
  - Serosorting
  - Reflection of risk behaviour

Mucosal and immunological damage

van de Laar TJ, et al. Increase in HCV incidence among men who have sex with men in Amsterdam most likely caused by sexual transmission. J Infect Dis. 2007
Sexual transmission of hepatitis C virus in men who have sex with men has been increasingly reported. van de Laar TJ, et al. See Transm Dis. 2011

Increasing Age in HIV

Increasing Age in HIV

HPV associated Anal Cancer Incidence

Low nadir CD4, alcohol use, and smoking are significantly associated with anal cancer in HIV+ MSM

Meningitis C in MSM

Los Angeles, California; France; and Germany have also reported clusters of MSM case-patients with serogroup C meningococcal disease, many HIV infected.

Community-Based Outbreak of Neisseria meningitidis Serogroup C Infection in Men who Have Sex with Men, New York City, New York, USA, 2010–2013

  - 3.9 cases/100,000 persons well below the CDC recommended threshold for mass vaccination (>10/100,000 persons)
- The slow-moving outbreak linked to use of MSM dating sites and apps
  - Complicated the epidemiologic investigation and prevention efforts.
- Steps taken to interrupt transmission
  - Direct, internet-based, and media-based communications
  - Free vaccination events
  - Engagement of community and government partners.
Neisseria meningitidis Serogroup C Infection in MSM, NYC, 2010−2013

- Email blasts to dating sites visitors successful cost-effective method to target the at-risk population.
  - Electronic outreach supplemented but did not substitute for traditional media.

- Used in tandem, traditional and social media can exponentially increase the effect of outreach.
  - Traditional media to penetrate mainstream society with a specific message
  - Social media to expand and target that message to hard-to-reach populations.

The promise of PrEP
Image and perception

From Truvada Whore
To Truvada Hero

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No New HIV Infections with Increasing Use of HIV Preexposure Prophylaxis in a Clinical Practice Setting

Jonathan E. Volk1, Julia L. Marcus1, Tony Phengrasamy1, Derek Blechinger1, Dong Phong Nguyen1, Stephen Follansbee1, C. Bradley Hare1

1Kaiser Permanente San Francisco Medical Center, Department of Adult and Family Medicine, San Francisco, CA, USA; Kaiser Permanente Northern California, Division of Research, Oakland, CA, USA

Referrals for and initiation of preexposure prophylaxis (PrEP) for HIV infection increased dramatically in a large clinical practice setting since 2012. Despite high rates of sexually transmitted infections among PrEP users and reported decreases in condom use in a subset, there were no new HIV infections in this population.

Concluding remarks 1
STI syndemics among MSM

- HIV, Syphilis, HCV, LGV, Men-C, MRSA, resistant gonorrhoea
  - next pathogens?

- Efficient networks:
  - international travel, new media
  - closed and intertwined

- Biological factors:
  - Impaired immunity, mucosal breakdown

- Substance use and disinhibition

- Poor healthcare access
  - criminalization, stigma, homophobia

Concluding remarks 2
Socio-political improvements

- Law and politics
  - Decriminalization of same-sex acts, protection of LGBTI

- Surveillance data
  - Underreporting of homosexual behaviour has led to underestimation of STI burden in MSM.

- Need for evidence based safe sex programs
  - involvement of community partners
Concluding remarks 3
Clinical improvements

• Medical training should provide clinicians with adequate training in STD care and the diversity of sexual orientation of patients.

• Better healthcare access via multidisciplinary care programs dedicated to prevention and treatment.

• The effect of PrEP on risk adaptation.

Thank you for your attention.