Descriptive Analysis of Patients with *N. Meningitidis* Urethritis Vs. *N. Gonorrhoeae* Urethritis

Lenore Asbel M.D.[1], Greta Anschuetz[1], Caroline Johnson M.D.[1]

(1) Philadelphia Department of Public Health Division of Disease Control, Philadelphia, PA

Department of Public Health CITY OF PHILADELPHIA LIFE • LIBERTY • AND YOU™

BACKGROUND

- *N. meningitidis (NM)* can colonize the anogenital tract, causing urethritis, however these reports are sporadic.
  - Between January – September 2015, Columbus OH reported 52 cases of urethritis confirmed to be caused by NM†.
  - Between January – October 2015, Oakland County, MI reported 15 cases of urethritis confirmed to be caused by NM†.
- Like the clinics in Columbus and Oakland County, Philadelphia's STD clinic (HC1) has been participating in the Gonococcal Isolates Surveillance Project (GISP) .
  - GISP requires collecting culture for *N. gonorrhoeae* (NG) testing on the first 25 males registering in the clinic each month who are diagnosed with urethral gonorrhea.
  - Tests are sent off for drug susceptibility testing to a GISP surveillance lab.
  - In August 2015, the reference lab reported back the first NM isolates.
  - By December 2015, the HC1 protocol was changed to require collection of a NAAT test in addition to culture to help detect NM cases.

OBJECTIVE

- To describe and compare the patients with NM Urethritis versus NG Urethritis.

METHODS

- HC1 policy is to culture males with urethral discharge
  - Samples are plated directly on MTM media and placed in a candle-jar and incubator until transported to the PDPH Public Health Lab (PHL).
  - *Neisseria* isolates without a corresponding positive NAAT were tested using RapID NH system to differentiate *N. gonorrhoeae* (NG) and NM.
- Demographic, symptom and laboratory data were obtained from clinic records for months when NM cases were detected.
- Characteristics of males with urethritis caused by *N. meningitidis* and those of males with urethritis caused by NG were compared.
  - GC Diagnosis in the last 12 months was defined as having a GC confirmed case in surveillance database in the 12 months before their current diagnoses at HC1

RESULTS

- Cases ultimately found to have NM were more likely to claim female partners (92%) compared to NG cases (67%).
- In addition, NM cases were less likely to be co-infected with HIV (4%) compared to NG cases (23%).
- Of the 20 NM specimens for which we have molecular typing, 19 are closely related and are part of the same cluster as those previously reported in Ohio and Michigan.
  - One isolate was not related to this cluster, but has been found in sporadic cases of NM urethritis throughout the US.

Table 1: Demographics NM vs. NG Urethritis Cases

		N. meningitidis (NM)		*N. gonorrhoeae (NG)*	
		N	%	N	%
N		26		298	
Age (mean)(min-max)	All	29.5y	19y-43y	30.4y	15y-65y
Gender of Sex Partners	Males	1	4%	68	23%
	Females	24	92%	200	67%
	Both	0	0%	23	8%
	Unknown	1	4%	7	2%
Race/ Ethnicity	Black	20	77%	209	70%
	Hispanic	2	8%	14	5%
	White	0	0%	20	7%
	Unknown/other	4	15%	55	18%
GC Diagnosis in the prior 12 months	Yes	6	23%	60	20%
	No/Unknown	20	77%	238	80%
HIV Status (combination of self report/testing)	Positive	1	4%	70	23%
	Negative	22	85%	205	69%
	Unknown	3	12%	23	8%
Discharge/Dysuria	Discharge and/or Dysuria	24	92%	289	97%
	None documented	2	8%	9	3%
Discharge Amount	Heavy	5	19%	109	37%
	Moderate	14	54%	122	41%
	Scant	6	23%	49	16%
	Not recorded	1	4%	18	6%
Discharge Color	Clear	1	4%	19	7%
	White	7	27%	31	10%
	Purulent	17	65%	217	73%
	Other	1	4%	31	10%
Gram Stain Results	Intracellular/Many or Mod or Few	20	77%	222	74%
	All Other Results	0	0%	23	8%
	Not done	6	23%	53	18%

DISCUSSION / CONCLUSION

- Besides gender of sexual partners and HIV status, male patients with NM urethritis were similar in age and race to patients with NG.
  - Serotyping results also support that the cases detected in Ohio and Michigan are related to the cases in Philadelphia.
- Since NM transmission may not be solely sexual the social implications of NM urethritis are great.

†Bazan JA, Peterson AS, Kirkcaldy RD, et al. Notes from the Field. Increase in *Neisseria meningitidis*–Associated Urethritis Among Men at Two Sentinel Clinics — Columbus, Ohio, and Oakland County, Michigan, 2015. MMWR Morb Mortal Wkly Rep 2016;65:550–552. DOI: http://dx.doi.org/10.15585/mmwr.mm6521a5