Methods. We examined data from two different sources: (1) the NYC Health Department sexually transmitted infections (STI) surveillance registry (January 2006–October 2017) in which OGI cases were defined as laboratory-confirmed infection of the eye or eye appendages; and (2) a hospital discharge database (inpatient and emergency room) for NYC residents admitted to any New York State hospital (inpatient, emergency room, and clinic) discharges, January 2006–December 2016) in which cases of OGI were identified using diagnostic codes corresponding to OGI. We characterized de-duplicated OGI cases identified across these data sources for 2006–2017 and calculated the OGI rate/100,000 reported gonorrhea cases.

Results. Thirty-six OGI cases were identified in STI surveillance data and 55 additional cases in the hospital discharge database. Out of the total of 91 OGI cases, 20 (22%) were ≤1 year (11 males, 9 females), 3 (3.3%) were 2–14 years (all males), and 68 (74.7%) were ≥15 years old. Among the 68 adolescent/adult case-patients, the mean age was 29.04 ± 13.4 years. The majority were males (69.1%, 47/68), and African American (42.6%, 29/68). The OGI rate in adolescents/adults was 39.95/100,000 gonorrhea cases (females, 35.76; males, 42.31); the rate remained almost constant since 2006 despite the increases in gonorrhea over the past decade. Conjunctivitis was the most common presentation (90.1% of all cases; 82/91), followed by eye appendage infections (2.2%, 2/91). The STI surveillance data revealed the diagnosis of OGI was made mainly by oculist culture (86.1%; 31/36), followed by nucleic acid amplification test (NAAT) (8.3%), or both culture and NAAT (5.6%).

Conclusion. The increasing incidence of syphilis in the young to middle age population is a concern in Japan. Although stroke is a known complication of syphilis, it is unknown for asymptomatic latent syphilis (ALS). Our aim was to investigate the results of routine syphilis tests to find the association between stroke and ALS in geriatric patients.

Methods. This retrospective observational study included patients above 65 years of age who underwent the rapid plasma reagin (RPR) and treponema pallidum hemagglutination assay (TPHA) tests (Showa Medical Science, Komagawa, Japan) as routine evaluation at an institute from August 2014 to February 2019. Asymptomatic patients with positive TPHA were diagnosed with ALS. Clinical data were collected, including the age, gender, history of stroke, underlying diseases, complications (therapeutic aortic aneurysm, aortic regurgitation, dementia), habits, indication for syphilis test, and syphilis description in the medical records. Negative TPHA was the exclusion criterion. The independent variables were used to determine the independent risk factors for stroke. All variables with P < 0.1 in the univariate analysis were evaluated using the multivariate model with the level of significance set at P < 0.05. Statistical analyses were performed using R version 3.3.1.

Results. A total of 10,117 geriatric patients underwent the syphilis test in the study period. The TPHA test was positive for 96 patients (0.95%), including 45 (46.9%) men, who were included in the study. The median age was 86 years (range: 65–102). The RPR test was positive for 51 cases (53.1%). The indications for syphilis test were syphilis screening for admission (n = 71), endoscopy (n = 16), health checkup (n = 3), and others (n = 6). No past treatment history for syphilis was found in the medical records. Syphilis descriptions were found for 6 patients (6.25%). One patient had been treated for ALS. A multivariate analysis revealed that positive RPR [odds ratio: 3.39; 95% confidence interval: 1.17 to 9.78; P = 0.0241] was associated with history of stroke. Medial evaluation about risk for stroke is necessary for ALS in geriatric patients.

Table: Characteristics and prognostic factors associated with history of stroke in ALS in geriatric patients.

| Variables | Total | Stroke+ | Stroke− | Univariate analysis | Multivariate analysis |
|-----------|-------|---------|---------|--------------------|----------------------|
| Male sex  | 48    | 10 (50) | 38 (46) | N.S.               | 0.79 (0.38–1.60)     |
| Median age| 88    | 85.5    | 86      | N.S.               | 0.90 (0.82–0.99)     |
| TPHA +, RPR + | 65 | 14 (20) | 51 (82) | N.S.               | 1.00 (0.62–1.62)     |
| Hypertension | 44  | 9 (45)  | 35 (46) | N.S.               | 0.75 (0.42–1.39)     |
| Hyperlipidemia | 17 | 3 (15)  | 14 (80) | N.S.               | 0.25 (0.08–0.78)     |
| Diabetes mellitus | 12 | 2 (10)  | 10 (80) | N.S.               | 0.10 (0.02–0.55)     |
| CKD       | 44    | 9 (45)  | 35 (46) | N.S.               | 0.92 (0.53–1.58)     |
| Alcohol intake | 15 | 4 (20)  | 11 (70) | N.S.               | 0.64 (0.25–1.64)     |
| Smoking history | 25 | 19 (75) | 6 (25)  | N.S.               | 0.84 (0.29–2.67)     |

TPHA: treponema pallidum haemagglutination assay; RPR: rapid plasma reagin.

Conclusion. For ALS in geriatric patients, positive RPR is associated with history of stroke. Medial evaluation about risk for stroke is necessary for ALS in geriatric patients.

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432. Qualitative Differentiation of Genital Ulcer Disease Etiology via Nucleic Acid Amplification Testing (NAAT)

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Background. Genital ulcers (GU) remain a common reason that both men and women seek treatment at US sexual health clinics. Presumptive diagnosis based solely on the macroscopic lesion characteristics is insensitive for differentiating between the common etiologies of GUs, which include HSV1/2, VZV, and syphilis. Given the ongoing and rapidly-expanding Syphilis epidemic, more accurate and timely identification of GU etiology would facilitate accurate therapeutic decision making, promote antibiotic stewardship, and have positive impacts on public health. The current study describes diagnostic workflows that allow for sequential/reflex or parallel GU testing, relying on a combination of IVD and published NAAT-based solutions, performed on the cobas® 4800 and/or cobas® 6800 Systems, to detect HSV1/2, VZV, and T. pallidum from a single specimen.

Methods. Commercially available control material for HSV1, HSV2, VZV, and T. pallidum were spiked into MSwab® and cobas PCR medium at varying concentrations. The spiked medium was either aliquoted directly to cobas® PCR Media Secondary Tubes (for testing on the cobas® 6800 System) or MSwabs were dipped directly into the spiked specimen vials and transferred to their respective collection tubes (cobas® 4800 System). GU testing on the cobas® 4800 System was sequential: performing the cobas® HSV1 and 2 Test first, followed by VZV and T. pallidum detection using residual DNA eluates and the User Defined Workflow (UDF) software. Testing on the cobas® 6800 System allowed for parallel processing and simultaneous detection of the 4 targets utilizing the cobas omni Utility Channel, which supports a complete, automated Lab Developed Test workflow.

Results. Qualitative detection of HSV1, HSV2, VZV and T. pallidum was demonstrated on both systems.