An Exploration of Delay to Treatment of STIs in an Outpatient Setting

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BACKGROUND: Adolescent females are at extremely high risk for sexually transmitted infections (STIs), such as *Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (GC), and *Trichomonas vaginalis* (Tv). Patients with STIs left untreated are at increased risk of acquiring HIV, developing pelvic inflammatory disease, experiencing pelvic pain and infertility, and contributing to the public health risk of further spreading their infections. Clinicians are faced with the challenge of whether to treat empirically and risk over treatment, or to await test results and risk a loss of patient follow-up. Few studies have investigated the mean delay to treatment for adolescent females or the factors influencing the treatment. This study explores if the mean delay to treatment of STIs, including CT, GC and Tv, is within 7 days (a clinical goal). The sensitivity & specificity of provider diagnosis of STIs in symptomatic and asymptomatic teenage females will also be assessed.

METHODS: Sexually active females presenting to the Teen Health Center at risk for STI completed questionnaires including information on patient symptoms, race, contraceptive use, and sexual history. Clinical findings, STI test results, presumptive provider diagnosis and treatment were also recorded. Paired t-tests (p-value < 0.05 significant), logistic regression models, chi-square testing, and descriptive statistics and frequencies were used to analyze patient data. CT and GC were diagnosed together (CT/GC) because all presumptive treatment for GC covered CT and because their similar diagnostic tests differed from that of Tv.

RESULTS: Two hundred (200) patients were studied (ages 14-21, mean age of 18, 80% black, 37% with vaginal symptoms, 35% with multiple symptoms.) Fifty-seven (57) patients were positive (28.5%), with 34 positive for CT/GC and 33 positive for Tv. The mean interval to treatment was 13 days and 11 days for TV and CT/GC, respectively. Seventy-five percent (75%) of Tv patients and 60% of CT/GC patients were treated within 7 days. Symptomatic patients were more likely to be treated within 7 days than asymptomatic patients ($p = 0.007$). In symptomatic patients, the odds ratio for being treated within 7 days was 9.5 (p-value = 0.014). Race, condom use, and interval since last sexual intercourse had no significant association with interval to treatment. For CT/GC, the sensitivity, specificity and positive predictive value for provider diagnosis were 8.6%, 97.3%, and 42.9%, respectively. For Tv, the sensitivity, specificity and positive predictive value were 48.5%, 100%, and 100%.

CONCLUSION: This study indicates a need for increased efficiency in STI treatment, as the clinical goal of a 7 day treatment interval is not being achieved. There may be unknown factors preventing patients from returning for care, accounting for part of the delay. While provider diagnosis for Tv and CT/GC is highly specific, the sensitivities show need for improvement. This study shows no physician bias for race, condom use, or interval since intercourse in treating patients, yet further studies with an increased sample size could provide further analysis.