Chlamydia test-of-cure in pregnancy

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Clinical Inquiries question

What is the optimal interval between treatment and test-of-cure (TOC) in pregnant women with *Chlamydia trachomatis* (CT)?

Evidence-based answer

The optimal interval between treatment and TOC in pregnant women with CT is 3 to 4 weeks (strength of recommendation C: several small prospective and retrospective cohort studies; a high-quality nonsystematic review; and a consensus guideline). Testing before 3 weeks might give false-positive results, while waiting longer than 4 weeks might delay detecting new infections or result in treatment failure.

Evidence summary

The Centers for Disease Control and Prevention recommends an interval between treatment and TOC based on a few small studies, which used either azithromycin or doxycycline in standard treatment regimens. Only 2 studies included pregnant women: a 2015 feasibility study and a 2017 prospective cohort study. The feasibility study of self-collected vaginal nucleic acid amplification tests (NAATs) for antenatal CT screening noted a TOC rate of 86% at 3 or more weeks after treatment (n=52).[1] The prospective cohort study, which included pregnant women (n=36) and nonpregnant women (n=36), followed the participants' self-collected weekly vaginal swabs after treatment, stopping once the NAAT results were negative. Twenty days after treatment, 94% of pregnant participants and 96% of nonpregnant participants had negative CT NAAT results. All NAAT results were negative 29 days after treatment (n=47).[2] Both of these studies used APTIMA second-generation NAATs, which use target-capture, transcription-mediated amplification, and hybridization protection assay. Additionally, a 2014 retrospective analysis in nonpregnant adolescents analyzed polymerase chain reaction (PCR) vaginal swab results after treatment: 21 days after treatment, 89% of women had negative test results for CT (109 of 123), consistent with the 3-week cure rates in the aforementioned studies using APTIMA.[3]

A 1993 prospective study followed 20 women for 5 months after CT treatment; all participants had negative cell culture and PCR findings 4 weeks after treatment.[4] A 1998 prospective study followed adolescents after treatment: 15 days after therapy, all urine test results (PCR and ligase chain reaction) were negative; however, the final analysis only included 8 participants.[5] In a 2011 prospective study, results of APTIMA vaginal swabs collected at 4 time points over a 2-week period were positive in 21% of participants 14 days after treatment (13 of 61 samples). No samples were collected after 14 days. Based on the percentage of women with negative APTIMA results at the 4 time points, a multiple linear regression analysis was used to predict 100% clearance at 17 days.[6] The authors posited that positive APTIMA results 14 days after treatment were likely due to the presence of CT ribosomal RNA in nonviable organisms, although serologic subtyping of CT was not performed.

The findings in one prospective cohort study challenge the strategy of a 1-time TOC 3 to 4 weeks after treatment. Forty-six women and 6 men were treated and followed at 6 time points over 8 weeks. Forty-two percent of participants had positive test results for at least 1 vaginal or anorectal sample (transcription-mediated amplification and PCR) taken after 3 weeks, suggesting that a single TOC might miss treatment failure or reinfection, though there was no serologic subtyping of CT to differentiate between these possibilities.[7]

Recommendations from others

The Centers for Disease Control and Prevention's 2015 "Sexually Transmitted Diseases Treatment Guidelines" state that pregnant women who have positive test results for CT should have a TOC with an NAAT 3 to 4 weeks after treatment.[8] A 2013 advisory group for the 2015 guidelines reviewed the available literature in addition to 2 less robust studies. Given the small size of these studies and considerable heterogeneity in study design, the advisory group concluded that the precise timing of CT clearance is unclear and continued to recommend an interval of 3 to 4 weeks between treatment and TOC in pregnancy.[9]

Editor's take-away

This high-risk group, patients recently diagnosed with CT, needs retesting because of possible treatment failure and risk of reinfection. The evidence also shows that early retesting—before 3 weeks—can yield false-positive results. Large randomized controlled trials are needed to support the conclusion to retest for CT 3 to 4 weeks after treatment.

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Competing interests
None declared

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