

InTray GC Medium Versus Modified Thayer-Martin Agar Plates for Diagnosis of Gonorrhea from Endocervical Specimens

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A new self-contained medium system for the cultivation of *Neisseria gonorrhoeae* was compared to modified Thayer-Martin medium for the diagnosis of gonorrhea from endocervical specimens. There was no difference in the ability of the two methods to support the growth of *N. gonorrhoeae*.

Although rates of gonorrhea are declining in the United States, it remains an important communicable disease in certain populations nationally and worldwide. Highly sensitive diagnostic tests are now available, such as PCR and ligase chain reaction, strand displacement assays, and transcription-mediated amplification (1, 8); however, these tests are relatively expensive and require sophisticated equipment for processing. Unamplified-probe assays are less expensive and more easily performed but may be less sensitive (5). Traditional culture methods continue to offer excellent sensitivity and specificity, but the medium has a limited shelf life and requires refrigerated storage prior to use. Recently, a new method of packaging medium has been developed which permits storage of the medium for up to 1 year at room temperature and has a self-contained system for production of carbon dioxide (InTray GC; BioMed Diagnostics, San Jose, Calif.). The plates consist of a rectangular tray with an inner well containing chocolate blood agar medium with antibiotics. A bonded seal over the well prevents evaporation and oxidation during storage. This medium has been shown to support the growth of laboratory strains of *Neisseria gonorrhoeae* after storage of the medium at room temperature for 1 year (W. L. Whittington, R. Hall, K. K. Winterscheid, J. Hall, J. R. Schwebke, and K. A. Borchardt, Abstr. Guide 13th Meet. Int. Soc. Sex. Transm. Dis. Res., abstr. 526, 1999). We now report the results of comparison of this new method to modified Thayer-Martin (MTM) agar plates for the diagnosis of gonorrhea in females.

Women who presented to the Jefferson County Department of Health Sexually Transmitted Disease Clinic with a new problem or for sexually transmitted disease screening and who were randomly assigned for care to any of three research nurses were eligible for participation in this study. These patients represented approximately 10 to 15% of the women seen at the clinic. The study was initiated in April 1999 and lasted for 5 months. Patients were enrolled and examined after giving oral consent. The study was approved by the institutional review boards of the University of Alabama at Birmingham and the Jefferson County Department of Health. Patients were examined according to a standard protocol. Two endocervical specimens for the diagnosis of gonorrhea were obtained by gently rotating a cotton swab in the cervical os for 10 to 30 s

and then inoculating the InTray GC plate and the usual MTM agar plate (Remel Microbiology Products, Lenexa, Kans.). The order of specimen collection was rotated. The carbon dioxide generator tablet was activated in the InTray GC plate. The medium was then sealed and incubated at 37°C for up to 72 h. The MTM agar plate was placed into a biobag with a carbon dioxide generator and incubated in the same manner. Plates were examined for colonies typical of *N. gonorrhoeae* daily for up to 72 h. Isolates were confirmed by Gram stain, oxidase production, and sugar utilization using Quadferm (bioMérieux Vitek, Inc., Hazelwood, Mo.). The InTray GC plates had been manufactured on 5 February 1999 and stored at room temperature.

The prevalence of gonorrhea in the study population was 10.4% (25 of 240). There was complete agreement between the InTray GC plates and the MTM agar, with the exception of one set of specimens which was positive on the MTM agar whereas the InTray GC was overgrown with a contaminant. One additional set of specimens was overgrown by a contaminant on both plates.

The diagnosis of gonorrhea in females relies primarily on screening, since the majority of women either are asymptomatic or have nonspecific symptoms (4). Although overall rates of gonorrhea are declining in the United States, many resource-poor nations are experiencing increasing rates (2, 3, 6, 7). A continued supply of fresh MTM medium, which requires refrigerated storage, is often difficult to obtain in these areas. Thus, an alternative medium with a long shelf life and tolerance of room temperature storage could be very useful. We have shown that the InTray GC plates are equivalent to MTM agar plates for the cultivation of *N. gonorrhoeae* from endocervical specimens. This method may be considered for use in place of MTM agar in settings where availability and storage of MTM agar are problematic.

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