

Transport Medium That Prevents the Conversion of Helicobacter Pylori to the Coccoid Form

Authors : Eldar Mammadov, Konul Mammadova, Aytaj Ilyaszada

Abstract : Background: According to many studies, it is known that H. pylori transform into the coccoid form, which cannot be cultured and has poor metabolic activity. In this study, we succeeded in preserving the spiral shape of H. pylori for a long time by preparing a biphasic transport medium with a hard bottom (Muller Hinton with 7% HRBC (horse red blood cells) agar 5ml) and liquid top part (BH (brain heart) broth + HS (horse serum)+7% HRBC+antibiotics (Vancomycin 5 mg, Trimethoprim lactate 25 mg, Polymyxin B 1250 I.U.)) in cell culture flasks with filter caps. For comparison, we also used a BH broth medium with 7% HRBC used for the transport of H. pylori. Methods: Rapid urease test positive 7 biopsy specimens were also inoculated into biphasic and BH broth medium with 7% HRBC, then put in CO₂ Gaspak packages and sent to the laboratory. Then both mediums were kept in the thermostat at 37 °C for 1 day. After microscopic, PCR and urease test diagnosis, they were transferred to Columbia Agar with 7% HRBC. Incubated at 37°C for 5-7 days, cultures were examined for colony characteristics and bacterial morphology. E-test antimicrobial susceptibility test was performed. Results: There were 3 growths from biphasic transport medium passed to Columbia agar with 7% HRBC and only 1 growth from BH broth medium with 7% HRBC. It was also observed that after the first 3 days in BH broth medium with 7%, H. pylori passed into coccoid form and its biochemical activity weakened, while its spiral shape did not change for 2-3 weeks in the biphasic transport medium. Conclusions: By using the biphasic transport medium we have prepared; we can culture the bacterium by preventing H. pylori from spiraling into the coccoid form. In our opinion, this may result in the wide use of culture method for diagnosis of H. pylori, study of antibiotic susceptibility and molecular genetic analysis.

Keywords : clinical trial, H. pylori, coccoid form, transport medium

Conference Title : ICMI 2023 : International Conference on Microbiology and Immunology

Conference Location : Rome, Italy

Conference Dates : April 13-14, 2023