

Are we Doing the Right Routine Stool Culture: A Prospective Study Among 40 Clinical Laboratories in Karaj City

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Dear Editor,

Bacterial culture, utilizing selective / differential media, is a valuable method for isolation and identification of many bacterial pathogens. Many bacteria are responsible for numerous diseases; in particular gastroenteritis. As a matter of fact, in 2011 CDC reported that 48 million people gets sick, 128,000 are hospitalized and 3,000 die from food-borne diseases. The most bacteria which involved in acquired food-borne diseases are *Salmonella* spp, *Clostridium perfringens*, *Campylobacter* spp., and *S. aureus* and their presence varies significantly over time as well as geographic location. In addition, enterohemorrhagic toxin-producing strains of *E. coli* (EHEC) account for one of the top five pathogens of food-borne illness that result in US hospitalizations (1).

An order for "stool culture for pathogens" is interpreted as a routine stool culture, includes screening for the presence of one of the above mentioned bacteria (2). For any research on clinical specimens, particularly stool samples, the specimen should be transported to the laboratory as soon as possible as any postponement may compromise the bacterial pathogen recovery. After collecting the stool specimen properly, it should be quickly submitted to the laboratory in order to identify the causative agent. Because performing the stool culture is expensive and time consuming, and to satisfy the urgent need for an efficient surveillance system for stool culture and to monitor the possible impact of this policy, we launched a project during six months (February to August, 2013) to establish a network for continuous monitoring of such clinical specimens among at 40 clinical laboratories which are affiliated to Alborz University of Medical Sciences, Karaj, Iran. This analysis of the stool specimen will provide fundamental information about the overall

gastrointestinal health of the patient. A total of 40 clinical laboratories were asked to participate in the study. We have designed a questioner containing 29 questions which were sent to all the clinical laboratories of Karaj.

Out of 40 laboratories, three laboratories did not participate in this study. Data of 37 laboratories were analyzed using SPSS software. 20155 stool samples in sterile containers from 37 laboratories were analyzed for the presence of bacterial pathogens; which lead to isolation of eleven *Shigella* spp, and eight *Salmonella* spp. Thirty six of the 37 (92.3%) laboratories used SF medium for enrichment, and 8 (21.6%) used GN broth as enrichment medium.

Most of the laboratories surveyed (90%) used at least SSA, Mc Conkey, and XLD as the culture plates. In contrast to our study, Persaud's study (3) reported DCA was the best medium for primary stool culture. Therefore, it is possible to conclude inability of our technicians to isolate and identify the causative agent and we can also assume that the bacterial pathogens may be overgrowth by the normal flora. Other reports also emphasis that inability to isolate and identify the pathogen may be due to inability of the medium to support the growth of the pathogen (4). Moreover, it is important to emphasize the fact that we could not find a plausible reason why the stool culture failed to detect the substantial proportion of pathogen in these patients.

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Author's Contribution

All authors have participated equally in this study.

Implication for health policy/practice/research/medical education:
Standard stool culture description.

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