

Two Years Experience of *Clostridium difficile* Diagnosis



Sashka Mihaylova^{1,2}, Kalinka Bozhkova¹, Georgi Slavov¹, Daniela Atanasova¹

¹Medical laboratory "LINA", Bulgaria; ²University "Prof. Dr. Asen Zlatarov", Bulgaria



BACKGROUND AND AIMS

Clostridioides difficile (formerly *Clostridium difficile*) is a Gram-positive, spore-forming, toxin-producing, anaerobic bacterium. It is the most common cause of health care-associated diarrhoea in developed countries and is a major source of nosocomial morbidity and mortality worldwide. One notable change in the epidemiology of *C. difficile* infections is the apparent increased incidence in communities that historically have been considered to be at low risk.

The aim of this study is to describe the epidemiological characteristics of patients who requested *C. difficile* testing and to discuss the significance of different positive combinations.

METHODS

Stool samples of patients were tested for *C. difficile* glutamate dehydrogenase (GDH), toxin A and toxin B. CerTest BIOTEC *Clostridium difficile* GDH+Toxin A+B one step combo card was used as a colour-detection chromatographic immunoassay. In Bulgaria the test was provided by ELTA'90.

Patient records were reviewed retrospectively. The following data were collected: age; gender; person who requested the analysis; test results; number of test repetitions; etc.

RESULTS

Two hundred twenty-four stool samples were tested for *C. difficile* from January 2016 to December 2017. The number of specimens increased three-fold in the second year (fig. 1). Patients were from 3 days to 86 years old. The prevalent age group for which the analysis was requested was 18-64 years. Gender distribution was almost equal (fig. 2). The majority of patients were ambulatory. Half of them have requested the test themselves. Approximately 84% of all patients exhibited negative tests. The most prevalent combination among the positive samples was: GDH (+); toxin A (-); and toxin B (-); followed by GDH (+); toxin A (+); and toxin B (+) (fig. 3). *C. difficile* was detected in all age groups. The highest prevalence was in patient group aged less than 1 year (fig. 4). Test repetitions were detected in 15 patients. Two patients were tested 5 times.

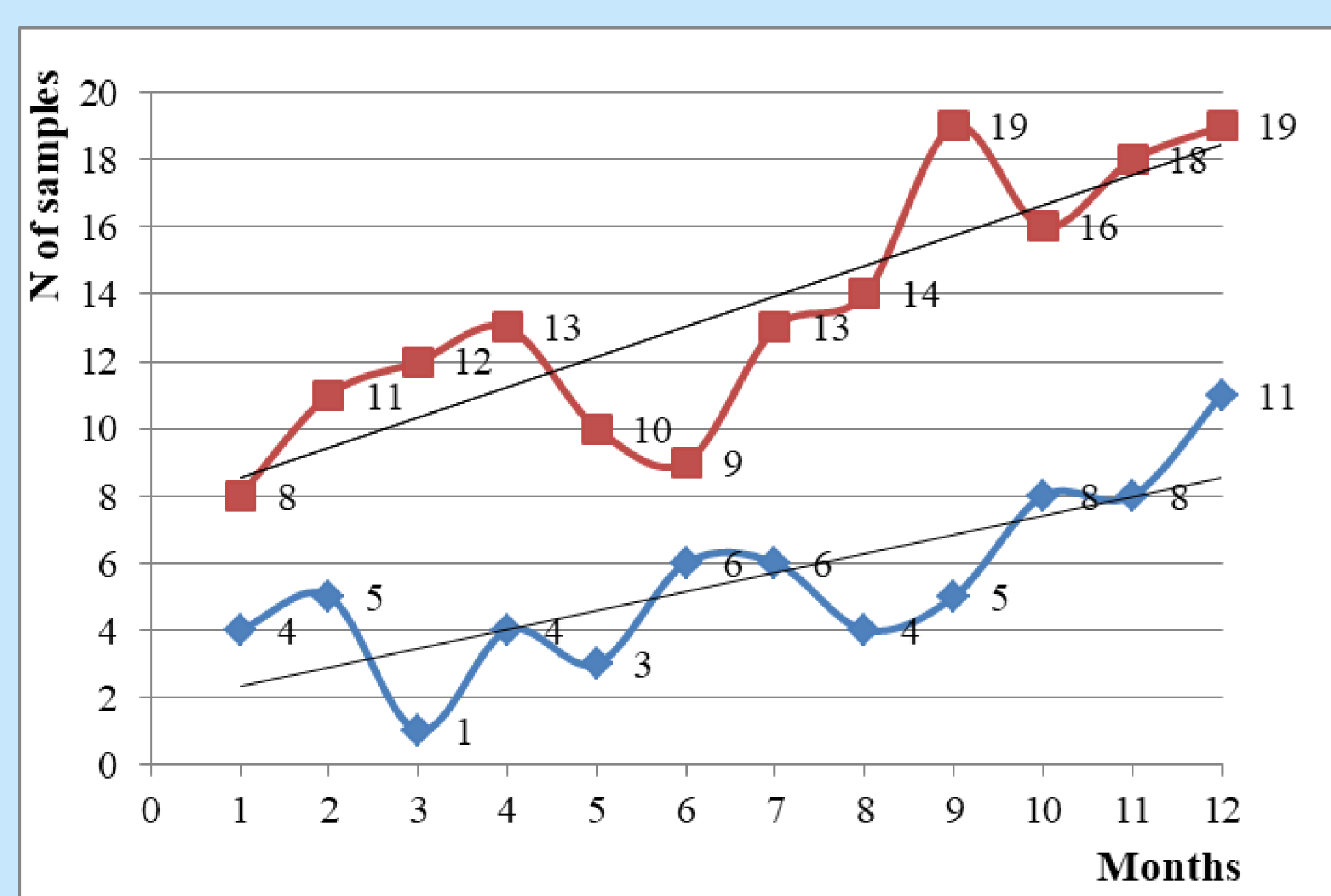


Fig. 1. Distribution of samples from January 2016 (■) to December 2017 (■)

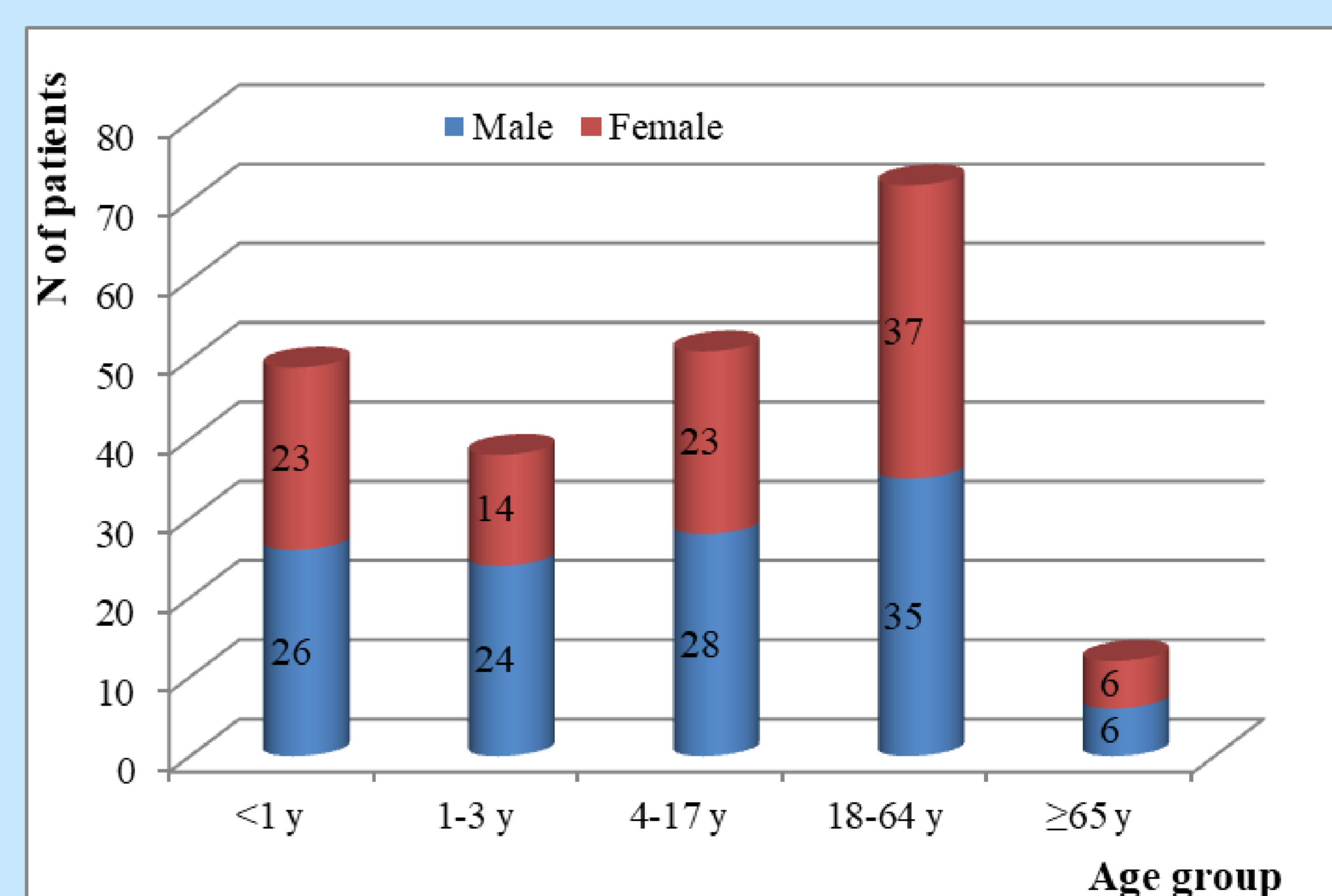


Fig. 2. Distribution of tested patients according to their age and gender

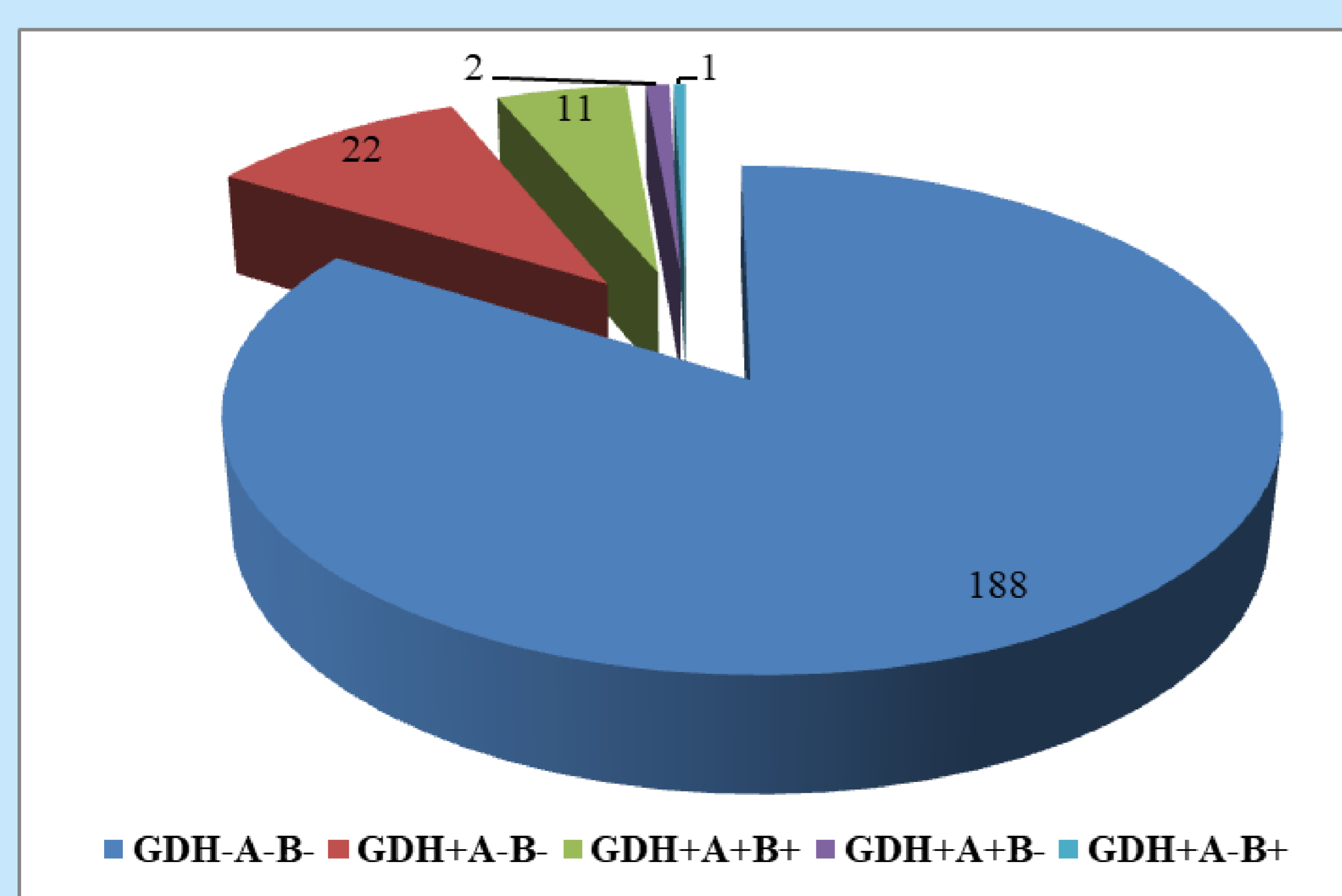


Fig. 3. Distribution of test result combinations

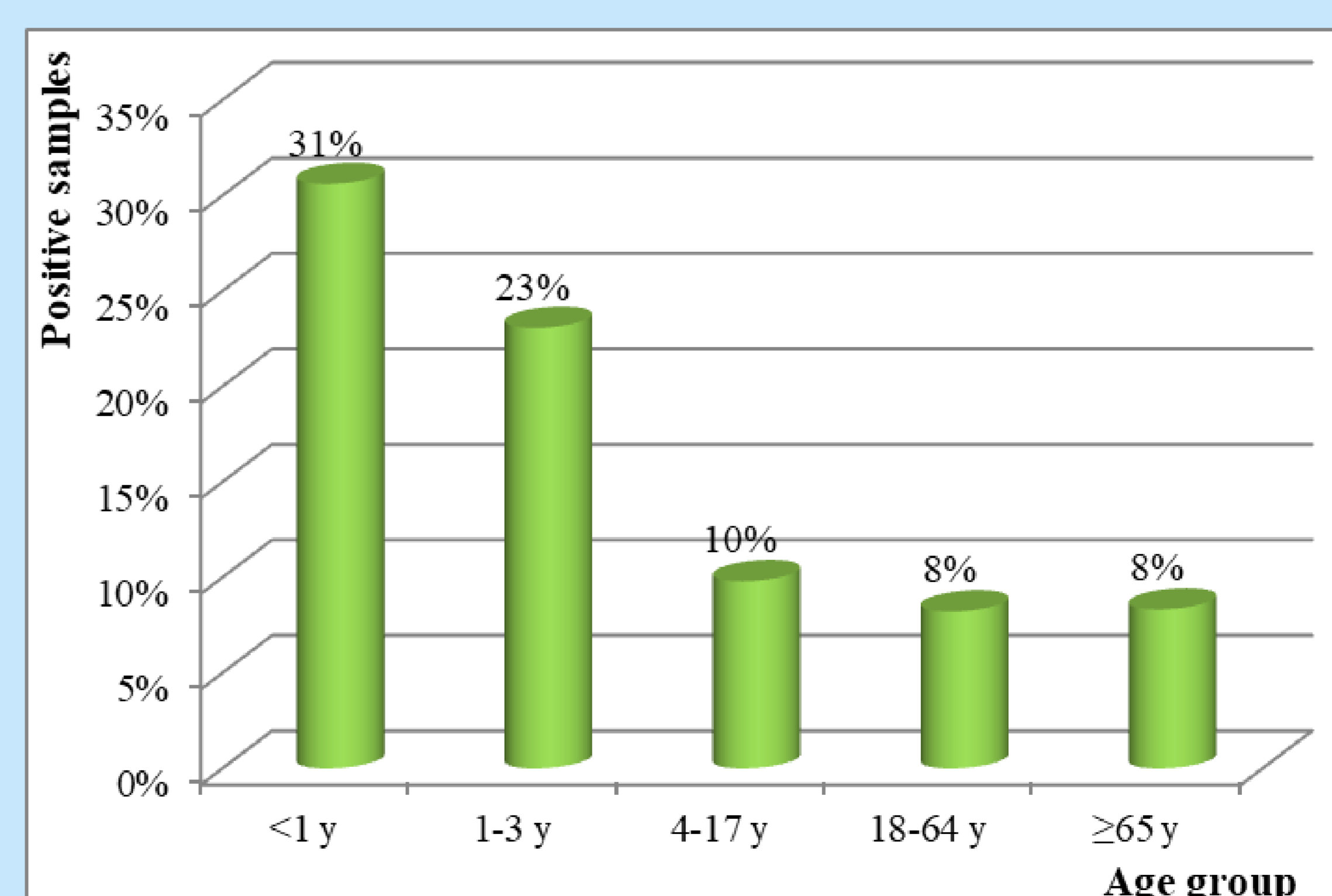


Fig. 4. Percentage of positive results among different age groups

CONCLUSIONS

- After introduction of *C. difficile* detection in Medical laboratory "LINA", Bulgaria there is an **increasing interest in testing**.
- *C. difficile* has become a key pathogen among **ambulatory patients**.
- **Patients should make consultations with their physicians** as a first step in clinical evaluation of their disease.
- Data on the incidence of *C. difficile* detection in different **age groups must be interpreted, dependent upon patient histories, physical examinations and laboratory assays**.
- **Medical specialists must follow guidelines regarding repetition of testing**.