Objectives: The aim of this study is to evaluate the epidemiological and laboratory findings of coinfections associated with acute gastroenteritis (AGE) in children in the region of Thessaloniki-Greece.

Methods: A total of 297 feces specimens from patients (children, 144 male 153 female, age range: 5 days – 14 years) with AGE were retrospectively studied. The patients were admitted to hospital as sporadic cases of AGE, during one year in Thessaloniki. All specimens were cultured with classical laboratory methods. The specimens were tested for Rotaviruses, Noroviruses, Salmonella spp, Campylobacter spp and Yersinia enterocolitica. The presence of Rotavirus was investigated by ELISA, whereas Norovirus both by ELISA and RT-PCR. Data included sex, age, presence of granulocytes in feces, electrolytes serum levels, blood count, erythrocyte sedimentation rate, CRP, seasonal distribution and distribution of the population in rural and urban areas. Statistical analysis was performed by SPSS 20.

Results: Coinfections were identified in 18 cases (6.1%) (10 male and 8 female). The majority of the coinfections were reported in 1-2 years old group (11/18, 61.1% p=0.003) and occurred in cold months (November to April) (14/18, 77.8%, p=0.001). Virus-virus coinfections (Rotavirus-Norovirus 12/18, 66.7%) were more frequent than bacteria-virus coinfections (6/18, 33.3%). Rotaviruses were the most frequently found causative agent in coinfections (16/18, 88.9%). Analysis of laboratory data showed a significant difference in the mean of the absolute number of lymphocytes (L) and monocytes (M) between mono- and co-infection groups (L 3214 vs 2156 respectively, p=0.043; M 1314 vs 986, p=0.05). There was also a statistically significant difference in the occurrence of electrolytic disorders between the two groups (higher rates in coinfected group 55% vs 30% p=0.023).

Conclusions: The epidemiological findings reveal that coinfection is more frequent in the 1-2 years old age group and also during the cold months. Furthermore Rotavirus is the most frequent agent of coinfection. The laboratory results emphasize the clinical importance of coinfections as a cause of severe diarrhea in children. This is supported by the more severe dehydration in the coinfected patients.