Background: Group A rotaviruses are the most common causative agent of acute gastroenteritis among children less than 5 years of age throughout the world. This sentinel surveillance study was aimed to obtain baseline data on the rotavirus G and P genotypes across Turkey before the introduction of a universal rotavirus vaccination program.

Methods: Rotavirus antigen-positive samples were collected from 2102 children less than 5 years of age who attended hospitals participating in the Turkish Rotavirus Surveillance Network. Rotavirus antigen was detected in the laboratories of participating hospitals by commercial serological tests such as latex agglutination, immunochromatographic test or enzyme immunoassay. Rotavirus G and P genotypes were determined by reverse transcription polymerase chain reaction (RT-PCR) using consensus primers detecting the VP7 and VP4 genes, followed by semi-nested type-specific multiplex PCR.

Results: RT-PCR found rotavirus RNA in 1644 (78.2%) of the samples tested. The highest rate of rotavirus positivity (38.7%) was observed among children in the 13 to 24 month age group, followed by children in the age group of 25 to 36 months (28.3%). A total of eight different G types, six different P types, and 42 different G–P combinations were obtained. Four common G types (G1, G2, G3, and G9) and two common P types (P[8] and P[4]) accounted for 95.1% and 98.8% of the strains, respectively. G9P[8] was the most common G/P combination found in 40.5% of the strains followed by G1P[8] (21.6%), G2P[8] (9.3%), G2P[4] (6.5%), G3P[8] (3.5%), and finally, G4P[8] (3.4%). These six common genotypes included 83.7% of the strains tested in this study. The rate of uncommon genotypes was 14%.

Conclusion: The majority of the strains analyzed belonged to the G1–G4 and G9 genotypes, suggesting high coverage of current rotavirus vaccines. This study also demonstrates a dramatic increase in G9 genotype across the country.