Background/aim: β-Lactamases are an important resistance mechanism in Acinetobacter baumannii. Pseudomonas extended-resistance (PER-1) type β-lactamase-producing strains have been reported from various geographic locations; however, PER-1 type β-lactamases from Turkish hospitals have not been investigated extensively. The aim of this study was to determine the prevalence of PER-1 type β-lactamases in A. baumannii isolates in various regions of Turkey.

Materials and methods: A total of 763 clinical A. baumannii isolates were collected from 9 university hospitals and 2 state hospitals between 2008 and 2011. Molecular amplification of the OXA-51 gene from the A. baumannii genome was performed in order to verify identification of the species. Real-time polymerase chain reaction was used to detect blaPER-1 genes.

Results: PER-1 was detected in 24.6% of the isolates. The annual frequencies of the PER-1 enzyme were detected as 52.2%, 35.9%, and 8.3% in 2008, 2009, and 2010, respectively. PER-1 prevalence decreased gradually over time. The differences observed in PER-1 prevalence among the regions of Turkey were statistically significant (chi-square test; P < 0.001).

Conclusion: These data demonstrate that the frequency of detection of PER-1 type β-lactamases in A. baumannii species has decreased in Turkey. However, the increased carbapenem resistance, together with multidrug resistance, has created a worrisome situation regarding this pathogen.