Multidrug-resistant Acinetobacter baumannii (MDR-AB) is emerging as a major nosocomial pathogen worldwide. In recent years, the inadequacy of antimicrobial agents available to treat infections particularly in Intensive Care Units (ICUs) due to MDR-AB, has constrained clinicians and forced them to use combination therapies. In this study, in vitro synergistic activities of imipenem and meropenem in combination with cefoperazone-sulbactam, ampicillin-sulbactam, polymyxin B and rifampin were tested against 34 clinical isolates of (MDR-AB), all collected from the Intensive Care Units of Süleyman Demirel University Hospital. Minimum inhibitory concentration values of all antibiotics were determined by the broth microdilution method and antibiotic interactions were analyzed by checkerboard assay. The combination of meropenem with ampicillin-sulbactam showed synergy against 94.1% of MDR-AB while the synergy rates for combinations of imipenem and ampicillin-sulbactam, imipenem and rifampin, imipenem and cefoperazone-sulbactam, imipenem and polymyxin B, meropenem and rifampin, meropenem and cefoperazone-sulbactam and meropenem and polymyxin B were 88.2, 73.5, 70.6, 38.2, 17.6, 8.8 and 2.9%, respectively. Antagonism was not observed in any of the combinations. We must emphasize the fact that evaluating the efficacy of combinations against MDR-AB by synergy tests is essential to guide the treatment.