Abstract In this study, we aimed to evaluate the mean platelet volume (MPV) levels of trauma patients who were admitted to our emergency department. Of the total 232 trauma patients, 40 females and 192 males over the age of 18 years were included in this study. Of them, 102 patients were mild trauma (Glasgow Coma Scale (GCS) 15-13), 40 patients were moderate (GCS 12-9) and 90 patients were severe trauma (GCS 8-3) patients. We also calculated the Revised Trauma Score (RTS) of the patients. MPV levels were evaluated with GCS and RTS values. The control group was constituted of 100 healthy adults. Mean initial MPV value of GCS 15-13 patients was 8.25 fL, 8.25 fL in GCS 12-9 patients and 8.47 fL in GCS 12-9 patients and 8.47 fL in GCS 8-3 patients. Trauma severity was significantly related with initial MPV (iMPV) levels (p < 0.05), initial Hb (iHb) levels (p < 0.05), initial white bloodcount (iWBC) (p < 0.05) and initial platelet (iPlt) levels (p < 0.05). Severity of trauma was related with control MPV (kMPV) levels (p < 0.05), control Hb (kHb) (p < 0.05), control WBC (kWBC) (p < 0.05), control Plt (kPlt) levels (p < 0.05). MPV levels (p < 0.05), Hb levels (p < 0.05), WBC levels (p < 0.05), Plt levels (p < 0.05) were significantly different between trauma group and healthy group. iMPV and control kMPV levels were not related (p = 0.149). But kHb - iHb levels (p < 0.05), kWBC - iWBC levels (p < 0.05), kPlt - iPlt levels (p < 0.05), kGCS - iGCS (p < 0.05) were related to each other. We found a correlation between iMPV and iWBC levels (p < 0.05, r = -0.342). Similarly, there was a correlation between severity of trauma and iMPV level (p < 0.05, r = -0.224). We determined a significant correlation between iMPV and iPlt levels (p < 0.05, r = -0.246). There was not a correlation between kMPV and kWBC (p > 0.05, r = 0.124). kMPV and kPlt levels (p < 0.05, r = -0.174) were correlated. RTS was statistically related with GCS (p < 0.05). Similarly, RTS was related with iMPV (p < 0.05), iWBC(p < 0.05) and iPlt (p < 0.05) values, but there was not a relation with iHb (p > 0.05). We found correlations between iMPV- trauma severity (p < 0.05, r = -0.224), iMPV - RTS (p < 0.05, r = 0.134), iMPV - iWBC (p < 0.05 r = -0.342), iMPV - iPlt (p < 0.05, r = -0.246). Control RTS (seventh day of hospitalization) values were not related to kMPV (p > 0.05), kHb (p > 0.05), kWBC (p > 0.05) and kPlt(p > 0.05). There was a correlation between kRTS and kMPV (p < 0.05, r = -0.169). Similarly, kMPV - kHb (p < 0.05, r = -0.141), kMPV - kPlt (p < 0.05, r = -0.174) were correlated. kMPV and kPlt were not correlated (p < 0.05, r = 0.124). Initial RTS and seventh day RTS values were significantly different (p < 0.05). MPV may be helpful for emergency physicians for predicting the severity of trauma.