OBJECTIVE
The aim of this study was to investigate the effect of early physiotherapy program on range of motion (ROM) and grip strength in zone I extensor tendon injuries.

METHODS
Thirty-two patients aged from 16 to 66 (36.56±12.95) years who were diagnosed with zone I extensor tendon injury (except thumb) and treated by surgical or conservative treatment between 2014 and 2017 were included in this study. Surgical procedure was performed by using K-wire (n=4, 30.8%), anchor (n=4, 30.8%), K-wire and anchor (n=2, 15.4%) and modified Kessler repair (n=3, 23.1%). IA static volar finger splint was used for involved distal interphalangeal (DIP) joint for 8 weeks (Figure 1). Injury severity was assessed with Modified Hand and Forearm Injury Severity Scoring (MHISS), active ROM (using distance measurements) at 8th and 18th weeks after injury (Figure 2) and the grip strengths at 12th and 18th weeks were evaluated. At postoperative 12th week, the disability and symptom status was evaluated with the Turkish version of Disabilities of the Arm, Shoulder and Hand Score (Q-DASH). All cases were followed-up every week for wound care, edema control, pain control and active joint motion exercises for uninvolved joints from the first postoperative week. Active blocking exercises (Figure 3) were started when splint was removed at 8th week. At 9th week tendon gliding exercises and at 10th week mild resistance exercises were started. The physiotherapy program continued for 12 weeks. The data were analyzed with appropriate statistical methods.

RESULTS
Sixteen cases were female (50.0%) and 16 cases were male (50.0%). 29 cases had right hand dominance (90.6%) and 3 had left dominance (9.4%). Sixteen cases (50.0%) had injury on dominant and 16 (50.0%) had on nondominant side. Number of involved fingers was shown at Figure 4. 5 cases had open injury (15.6%), 27 cases had closed trauma (84.4%), 9 cases had distal phalanx fracture (28.1%).

19 cases were followed by conservative treatment (59.4%) and 13 (40.6%) had a surgery. The mean MHISS score was 8.56 ±2.72 and Q-DASH score was 26.89±16.09. At 18th week, flexion of the injured finger was significantly higher when compared to the 8th week results both groups (p<0.05) (Table 1). However, there was no significant difference in hand and pinch grip strength at 12th and 18th weeks (p>0.05) (Table 1). Also, there was no significant difference in distance measurements and hand-finger grip strengths in groups analysis. Extension deficit was not significant but cases were suffer from flexion deficit (Table 1).

CONCLUSIONS
As a result of this study, improvement of ROM was provided with early physiotherapy however, recovery of grip and pinch strengths were not significant. To prevent patient from extension deficit we recommend that early physiotherapy program with 8 weeks immobilisation protocol. But in order to be able to interpret the results more clearly we think that in the larger sample groups, evaluations in the late period and long intervals are needed.

REFERENCES