Body: Fast-track surgery (FTS) and enhanced recovery after surgery (ERAS) have been applied to many surgical procedures; however, data on FTS and ERAS following liver transplantation is limited. The aim of this study was to conduct a prospective study to determine the effects of FTS on prognosis after liver transplantation. This was a prospective, single-blinded, randomized study. One hundred twenty-eight patients undergoing liver transplantation were selected to undergo the fast-track (FT group, n=54) or conventional process (NFT group, n=74). The primary endpoints were length of intensive care unit (ICU) and hospital stays. Secondary endpoints analyzed were as follows: operative time; anhepatic phase time; intra-operative blood loss; intra-operative blood transfusion volume; post-operative complications; readmission rate; and post-operative mortality. Pre-operative demographic data were not significantly different between the two groups. The median ICU stay was 2 days (range, 1-7 days) in the FT group and 5 days (range, 3-12 days) in the NFT group (P<0.01). Furthermore, the total hospital length of stay was also significantly reduced in the FT group (P<0.01). The operative time, anhepatic phase time, intra-operative blood loss, and intra-operative blood transfusion volume were decreased in the FT group compared with the NFT group (P<0.05). Based on Spearman correlation analysis, the ICU and hospital lengths of stay may be positively correlated with operative time, anhepatic phase time, and intra-operative blood loss. There were no differences in the incidence of post-operative complications, hospital readmissions, and post-operative mortality between the two groups. In conclusion: Fast-track procedures effectively reduce the length of ICU and hospital stays without adversely affecting prognosis, supporting that fast-track protocols are safe, feasible, and effective in liver transplantation.