Weekend versus Weekday Admission and Acute Cholangitis Outcomes in University Hospital: A Prospective Study

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**Background:** Several trials reported that weekend admission is associated with increased mortality. But the retrospective studies showed that weekend admission does not negatively impact outcomes of patients with acute cholangitis. However, no prospective study has been performed.

**Objective:** To compare outcomes of acute cholangitis between weekend and weekday admission.

**Methods:** We conducted a prospective cohort study of patients, admitted with acute cholangitis between January 2016 and September 2017. The primary outcome was in-hospital mortality rate. Secondary outcomes included endoscopic retrograde cholangiopancreatography (ERCP) performance, organ failure, length of stay, and 30 days mortality.

**Result:** The cohort consisted of 240 patients (74.6% age > 60 years, 59.6% male). Eighty-eight patients (36.7%) were admitted on a weekend and 152 (63.3%) on a weekday. Common bile duct stone was the most common cause of acute cholangitis (68.3%). Time to perform ERCP was no statistically difference between weekend and weekday (47 hr and 27 hr, p-value = 0.159). By 24 h, both groups had undergone a similar rate of ERCP (30.7% and 42.8%, p-value = 0.074). By 48 h, the weekend group had undergone ERCP less frequently than the weekday group (42% and 60.5%, adjusted OR, 0.47; 95% CI, 0.27 – 0.82). However, in-hospital mortality rate was no difference between group (9.1% and 9.2%, p-value = 1.00). The 30-day mortality rate, organ failure, and length of stay were no difference too. While post-ERCP pancreatitis often reported during weekdays than on weekends but no statistically significant (0% and 4.6%, adjusted OR, 0; 95% CI, 0 - 1). In subgroup analyses, patients with mild cholangitis underwent ERCP faster during weekday (time to performed ERCP 73 hr and 40 hr, p-value = 0.047). Patients with moderate and severe cholangitis underwent a similar rate of ERCP. While in-hospital mortality and 30-day mortality rate in any severity were not different between weekend and weekday groups.

**Conclusion:** Despite weekend patients undergoing ERCP in 48 hours less frequently than weekday patients, weekend admission does not negatively impact outcomes of patients hospitalized with acute cholangitis. (clinicaltrials.in.th: TCTR20171023001)

**Keywords:** Cholangitis, Weekend, Weekday, Admission