**Keywords**: bile duct neoplasm; biliary tract neoplasm; cholangiocarcinoma; FRAIL scale; pre-frail

## Abstract

Frailty is a risk factor for unfavorable outcomes, as it can lead to the inability of patients to adapt to stressors. It is a common condition in the elderly, but can also occur in younger patients with cancer. This study focused on the prevalence of frailty in biliary tract cancer (BTC) patients and its associated factors. A total of 75 BTC patients who received chemotherapy during the period between January 2016 and September 2017 were enrolled. Frailty was diagnosed using the FRAIL scale (Fatigue, Resistance, Ambulation, Illnesses, and Loss of weight). Univariate and multivariate regression analyses were used to analyze factors associated with frailty. The prevalence rates of frailty and pre-frailty were 12% (nine cases) and 60% (45 cases), respectively. According to multivariate logistic analysis, three factors were associated with frailty, including advanced age, high body mass index (BMI), and history of liver surgery. The adjusted odds ratio (OR) of these factors were 1.12 (95%CI: 1.01, 1.24), 1.28 (95%CI: 1.01, 1.64), and 6.16 (95%CI: 1.11, 34.16), respectively. In conclusion, frailty is not uncommon in BTC patients. Advanced age, high BMI, and history of liver surgery are important risk factors for frailty.