

# Risk Factors for Development of Complications by Untreated Common Bile Duct Stones: A Cross-Sectional Observation Study

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## Abstract

**Background** It is recommended by the latest guidelines that common bile duct stones (CBDs) should be removed, preferentially endoscopically, regardless of the presence of symptoms or complications. However, it may not be feasible due to very-old age and/or co-morbidities or rejected by patients. **Aim** We aimed to identify factors for development of complications after diagnosis of CBDs to select vulnerable patients for whom removal of CBDs should be performed despite of risks. **Methods** Medical records of patients with radiologically-confirmed CBDs between October 2005 and September 2019 were retrospectively analyzed. **Results** Among a total of 634 consecutive patients, complications, defined as obstructive jaundice, biliary pancreatitis, or acute cholangitis, were already present in 416 (65.6%) at the time of diagnosis of CBDs and developed in 95 (15.0%) afterwards. Forty four (6.9%) patients remained silent with the median follow-up periods of 31.5 months. With multivariate analyses, untreatment within 1 month and the size of CBDs > 5 mm turned out to be independent risk factors for development of complications. Spontaneous passage of CBDs was confirmed radiologically in 9 (11.1%) out of 81 patients untreated within 1 month. **Conclusions** CBDs should be removed within 1 month from the diagnosis, even in unsuitable patients, especially if the size exceeds 5 mm.

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### Running title : Impact of early treatment of bile duct stone

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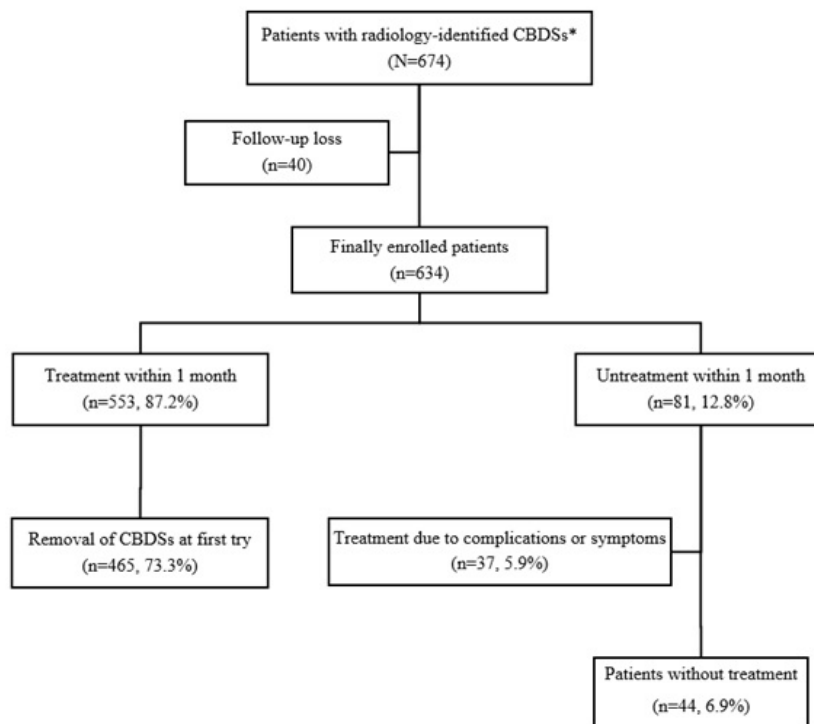
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### Disclosures

There are no potential conflicts of interest to be reported

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### Complication after diagnosis of CBDSSs\*

