16th SINGLE TOPIC SYMPOSIUM

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Effects of perioperative pulmonary rehabilitation in HBP surgery

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Background: Based on the enhanced recovery after surgery (ERAS) guideline, a pre-rehabilitation program started 3-6 weeks before major surgery is recommended to reduce postoperative complications and preserve functional status. However, the available evidence on specific and effective protocols of both pre-and post-rehabilitation is scarce. This study aims to investigate the effects of pre-and post-rehabilitation on pulmonary complications, hospitalized days, and cardiopulmonary functions in patients undergoing pancreaticoduodenectomy (PD) and related surgeries.

Methods : A retrospective medical record review was conducted on patients who underwent PD, bile duct segmental resection, pancreatectomy, and radical cholecystectomy. Patients consulted pre- and post-rehabilitation to the Department of Physical Medicine and Rehabilitation ranged from a day to 4 weeks before the surgery. The rehabilitation group received an "at-home exercise" educational session from the physiotherapist, including aerobic exercise for more than 30min, 5 times per week, resistance exercise of major muscle group for 15-20min, and inspiratory muscle strengthening training before the operation. After the operation, the patients conducted the aerobic exercise, resistance exercise, and sputum management. We collected the data on pulmonary complications using chest x-ray after the operations, hospitalized days, and cardiopulmonary functions outcomes.

Results : In this study, 89 patients were consulted for pre- and post-rehabilitation, although 69 patients with a mean age of 67 years old were not consulted. There was no significant difference between the rehabilitation group and the non-rehabilitation group in terms of age and gender. The incidence of postoperative pulmonary complications in the rehabilitation group was significantly lower than that in the non-rehabilitation group (14.6% vs 33.3%, p=0.005). Also, the patients in the rehabilitation group had significantly fewer postoperative total hospitalization days compared to patients in the non-rehabilitation group (11.6 days vs 16.3 days, Table 2). In cardiopulmonary function outcomes, MIP (mmH2O, %), MEP (mmH2O, %), and PCF improved after pre-rehabilitation, but hand grip and 6MWT showed no differences or decreases.

Conclusions : In conclusion, we suggest that pre- and post-rehabilitation in patients undergoing PD and related surgeries help prevent postoperative pulmonary complications, shorten hospitalization days, and improve cardiopulmonary function outcomes.

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