

Outcomes and their influencing factors after intended-curative Whipple Procedure at Al-Makassed Hospital – Jerusalem: a retrospective study 2015 – 2021, a single-center 7 years' experience.

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Background: It's well known that Whipple Procedure is major surgery, with multiple complications that can occur due to the nature of the surgery, characteristics of the patients, nature of the disease e.g. Pancreatic ductal adenocarcinoma (PDAC) which is known to have the poorest prognosis of all GIT malignancies, even after the tumor has been completely resected. 1 Pancreatic cancer is generally found in the older population. Pancreaticoduodenectomy seems to be the only way in resolving these resectable tumors.

Palestine has limited statistical data published internationally regarding the complications rates of the Whipple procedure. The data we have are based on the knowledge of other centers of western countries, which can be different in the setup of people characteristics, institutions characteristics, perioperative care, and all of that can influence the final result and outcomes. That why we need a data collection about the outcomes of Whipple's procedure in our country, and institutions particularly.

Patients' files were reviewed retrospectively for those who underwent Whipple's Procedure between 2015 till the end of 2021. The objectives was to identify the outcomes, complications, and clinical and pathological features that can affect certain complications after the Whipple procedure in our institution, Almakassed hospital, as it is considered a tertiary care hospital in Palestine, Trying to find the correlation between certain clinicopathological factors and characteristics of the disease and the outcomes of patients who underwent Whipple's procedure with intended curative resection. No research was carried out on such a topic, neither by our institution nor other hospitals that do the same operation.

Methods –This study is a retrospective study that studied 49 patients who were operated on with pancreaticoduodenectomy (a.k.a Whipple procedure) by the surgical team at Almakassed hospital from 2015 to the end of 2021. Proposal was sent for research committee in of the hospital and got the approval prior to data collection. Data were found in the patients' medical records which were accessed through the Hospital Information System - HIS (which was deployed in the hospital since 2015). For each patient included in the study; review of the history, personal details, past medical history, hospital course including preoperative work up, staging CT scan, laboratory findings, anesthesia evaluation, post-operative hospital course, and final pathology. Data analysis was done using SPSS software (version 23). All operable and resectable tumors that were candidates for the Whipple procedure were included in the study during the mentioned period

Findings: From 2015 till 2021, 49 operated cases were collected and analyzed. The mean age of cases was 56.12 years, the mean hospital stay length was 16 days, ranging from 7 days to 35 days. The most common presenting symptom was jaundice (51 %). Most sites of the tumor were the head of the pancreas (55%). Most patients with malignant tumors were in stage IIB in final pathology. Wound infection was the most common postoperative complication (22%). Major morbidities of these patients consisted of pulmonary complications (10%). Mortality during the same admission of the surgery was 4% (2 patients). Pancreatic anastomosis leak was found in 4 patients, 8%. On

analysis of data of wound infection results and possible risk factors; no significant correlation ($P\text{-value} < 0.05$) was found, and this assumed to a small sample size that we have ($N = 49$).

Interpretations: Outcomes of our surgical team are comparable to the published data of other centers. Multiple complications can result from such a major procedure. Wound infection is the most common complication after Whipple surgery. Further studies have to be done to include data from other institutions and other previous years (before 2015) to have significant correlations between wound infection and risk factors. Also, further studies need to study the short- and long-term survival of the patients.