

Conference Abstracts

Secondary Hematologic Malignancies After Pancreatic Chemotherapy (MP-SIR Study)

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Background

Pancreatic cancer has a poor prognosis, and chemotherapy is one of the primary treatments. Survivors of pancreatic cancer may develop chemotherapy-related secondary hematologic malignancies, but population-level comparative studies between patients treated with chemotherapy and those not treated are limited. So, to define its role in increasing the risk of chemotherapy-related secondary hematologic malignancies requires further comparative studies in large, population-based cohorts.

Objective

The study aims to compare the risk of developing secondary hematologic malignancies in cancer surviving patients who received chemotherapy versus those who did not.

Methods

We conducted a Multiple Primary Standardized Incidence Ratio (MP-SIR) analysis using the Surveillance, Epidemiology, and End Results (SEER) database. The study included 22,706 patients diagnosed with first-primary pancreatic cancer between 2004 and 2020, stratified by chemotherapy treatment. Standardized Incidence Ratios (SIRs) were calculated by comparing observed secondary hematologic malignancies incidence in each cohort (with chemotherapy vs

without chemotherapy) to expected rates based on age-, sex-, and calendar-period-specific population incidence rate.

Results

For all lymphatic and hematopoietic diseases combined, the overall risk was not significantly elevated: no-chemo cohort O/E = 1.00 and chemo cohort O/E = 0.88 (not elevated overall). Patients who did not receive chemotherapy had an SIR of 1.0 for all lymphatic and hematopoietic diseases, indicating a risk identical to the general population. In contrast, patients treated with chemotherapy showed a distinct, time-dependent risk pattern, and their overall SIR was 0.88. However, a specific, significant time-dependent increased risk was observed for acute myeloid leukemia (AML) in the chemotherapy cohort (total O/E = 1.85), with the largest latency-specific excess occurring at 12–59 months after diagnosis (O/E = 2.65). In the no-chemo cohort AML O/E = 0.43 with few observed cases. These findings reveals a chemotherapy-related, time-dependent increase in AML risk in pancreatic cancer patients despite no overall increase in combined hematologic malignancies

Conclusion

This population-based study reveals that the risk of secondary hematologic malignancies in pancreatic cancer patients is primarily associated

with chemotherapy exposure. Although the overall secondary hematologic malignancies risk remains low, there is a statistically significant and clinically relevant increase in latency-dependent Acute Myeloid Leukemia (AML) risk. These findings highlight the importance of long-term

post-chemotherapy hematologic surveillance in this population.

Keywords

pancreatic cancer, secondary malignancies, chemotherapy, acute myeloid leukemia, standardized incidence ratio, SIRs