Racial disparities in the treatment of metastatic pancreatic cancer using 5-Fluorouracil (5-FU) vs. Gemcitabine-based combination chemotherapy: A single-institutional analysis.

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Introduction

Metastatic pancreatic adenocarcinoma is very aggressive with poor prognosis for which 5-FU or gemcitabine-based combination chemotherapy remains the first-line treatment. In a meta-analysis by Rong Tang et al., gemcitabine-based treatment was non-inferior to 5-FU. Treatments are usually selected based on the patient's tolerability and side effect profile. This study aims at studying the outcomes after treatment of metastatic pancreatic adenocarcinoma with 5-FU versus gemcitabine-based therapy in the Caucasian and African American (AA) population.

Methods

*All patients >18 years of age with metastatic pancreatic adenocarcinoma who received palliative chemotherapy at the LCMC health system between January 2015- January 2021 were extracted from EPIC EMR through Slicer Dicer.

*Information was obtained about the type of palliative treatment, progression, and associated comorbidities.

*Multivariable Cox regression was performed to determine whether 5-FU or Gemcitabine-based treatment was superior in terms of progression-free survival and overall survival from the start of treatment after adjusting for covariates like race, gender, age, and comorbidities.

*Patients who stopped treatment for any reason other than progression/death were considered censored at that time.

*Deviance-based tests were used to determine whether there was a race/treatment interaction.

Results

*116 patients were included in the analysis, of which 52.9% used Gemcitabine, 54.3% were AA, and 50% identified as male.

*The average age, BMI, and number of comorbidities were 65.7, 25.3, and 1.8, respectively.

*AA patients were slightly more likely to receive first-line gemcitabine (62.2% vs. 44.4%, p=.064) and cox regression showed no relationship between treatment and PFS (p=.25) nor race (p=.507).

*5FU showed a decreased hazard of PFS in Caucasian patients compared to gemcitabine (adjusted Hazard Ratio = .43, 95% CI = .2-.95, p=.036), however the treatment effect in AA patients was non-significant (aHR = 1.19, 95% CI =.87-1.63, p=.28).

*In the subset of patients with at least 1 month of treatment (n=94), patients who received 5-FU based treatment first had a significant increase in overall survival (aHR = .57, 95% CI = .34-.96), while AA patients had increased but not significant survival (aHR = .64, p=.075).

*There was no interaction between treatment and race (p=.66).

Conclusions

Our study showed an increase in PFS in 5-FU-based treatment in Caucasian patients compared to Gemcitabine. AA patients were more likely to receive Gemcitabine-based therapy first, but no difference was noted in the PFS. 5-FU-based treatment significantly increased the overall survival when compared to gemcitabine in the whole cohort.