

# Characteristics of Patients with Ampullary vs. other Periapullary Carcinoma

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## Introduction

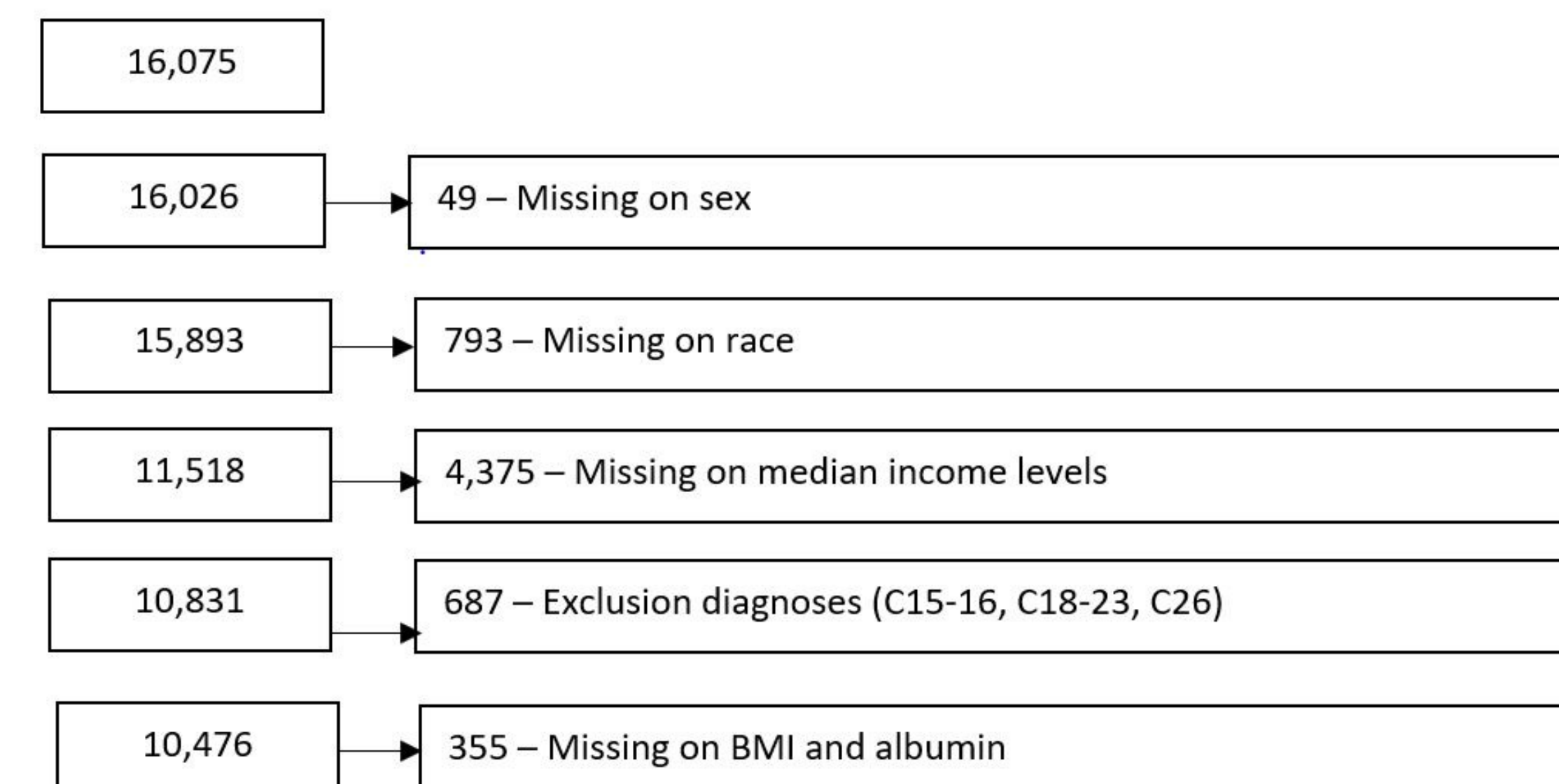
- Ampullary carcinoma are an exceedingly rare neoplasia comprising 0.2% of all gastrointestinal cancers.
- Despite this, however, they are responsible for up to 20% of all tumor related obstructions of the common bile duct (CBD), and their rates are increasing.
- The method of treatment with the best outcomes is pancreaticoduodenectomy, otherwise known as Whipple surgery, but these patients still have less than 50% survival at five years.
- These neoplasia are distinct but a part of a group of cancers labeled periampullary carcinomas, which consist of primary duodenal, distal bile duct, pancreatic and ampullary carcinomas anatomically centered around the Ampulla of Vater.
- In the literature there exists limited data comparing the demographic, socioeconomic and disease related factors in ampullary vs. periampullary carcinomas.
- This knowledge can help define unique methods for evaluation and management of this rare cancer.
- In this paper we describe individual patient data as well as trends in comorbidities, outcomes, and socioeconomic factors in patients with ampullary vs. periampullary carcinoma in a large system-wide database.

## Methods

- Deidentified patient information was obtained via data gathering software based on CPT codes.
- Of these, 16,075 patients were found to have a diagnosis of one periampullary carcinoma. 49 had sex missing, 793 had race missing, 4,375 had median income level missing, 687 were excluded due to diagnosis of other malignancy, immunosuppression, or lack of outcomes data. 355 were excluded due missing BMI or albumin levels, leaving us with 10,476 patients.
- Statistical analysis was done on commercially available software.

## Results

- There were 245 patients with ampullary carcinoma and 10231 with other periampullary carcinoma.
- The other periampullary carcinomas included 9199 (89.91%) pancreatic, 620 (6.06%) bile duct, and 412 (4.03%) duodenal.
- Ampullary carcinoma was more common in Hispanic patients (19.59% vs. 13.08%, p<0.001).
- A higher proportion of patients with ampullary carcinoma were discharged home than those with periampullary (74.29% vs. 57.79%, p<0.001).
- ICU admission was more common among patients with ampullary carcinoma (37.55% vs. 28.92%, p=.004) though patients with other periampullary carcinoma were more likely to be admitted from the emergency department (ED) (77.19% vs. 58.37%, p<0.001).
- The length of stay of patients with ampullary carcinoma was higher (8.45±8.59 vs. 6.17±6.41 days, p<0.001).
- Patients with ampullary carcinoma were more likely to present with cholelithiasis (15.51% vs. 6.16%, p<0.001), primary sclerosing cholangitis (PSC) (46.12% vs. 28.25%, p<0.001), and to seek surgical treatment (79.18% vs. 49.94%, p<0.001).
- They also presented with higher alkaline phosphatase (4.11.42±365.51 vs. 339.12±378.55, p=0.004) and total bilirubin (4.69±6.21 vs. 3.40±4.50, p=0.002).
- Compared to the ampullary patients with the lowest income group (\$19,000-\$50,000), the patients in the income group of \$70,000 to \$100,000 are estimated to have a length of stay 10.328 days shorter (p=0.044)



## Discussion

- In our large retrospective study we show that patients with ampullary carcinoma differ substantially in both their demographics and their clinical characteristics in comparison to patients with other types of periampullary carcinoma.
- These patients were more likely to be Hispanic, and had a more bimodal admission pattern when compared to other periampullary carcinomas, more commonly being discharged home or admitted to the ICU. Once admitted their hospital stays were often longer, and they more commonly received surgical treatment.
- These findings will help clinicians tailor their evaluation based on symptoms and their patients, allowing more individual management. We also show that socioeconomic level plays a substantial part in the outcomes of these patients, a topic which has yet to be previously studied.

