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INTRODUCTION

Biliary tract cancers (BTCs) are poorly studied due to their relative rarity and heterogeneity. We explored the demographics and outcomes of BTC patients in Alberta, Canada over a 15-year period.

METHODOLOGY

All patients with biopsy-proven BTCs in Alberta diagnosed between January 1st, 2000 and December 31, 2015—which includes intrahepatic cholangiocarcinomas (IC), extrahepatic cholangiocarcinomas (EC), gallbladder cancers (GB), and ampulla of Vater cancers (AV)—were reviewed. Demographic, pathologic, and survival data were extracted from electronic charts. We applied various descriptive statistics to characterize their outcomes. Here, overall survival (OS) is defined as the time from pathologic diagnosis to death.

RESULTS

A total of 1,617 patients were identified with these characteristics. The median age at diagnosis was 68 (range 19-99) years old. Median OS for all BTCs is 9.4 months. OS per subtype is shown in Figure 1b. Regardless of location, stage, tumor grade, or ECOG, the resectability status at diagnosis impacted survival. Patients who received standard of care palliative cisplatin with gemcitabine chemotherapy (n = 233) had a median OS of 15.5 months (Figure 4c).

Figure 1: Demographic profile and survival by BTC location subtype

SUBTYPE	n (%)	MALE (%)	FEMALE (%)	AGE AT DX (RANGE)
Gallbladder	533 33%	180 34%	353 66%	69 (26-99)
Extrahepatic	399 25%	229 57%	170 43%	69 (26-95)
Intrahepatic	386 24%	192 50%	194 50%	65 (19-89)
Ampullary	245 15%	142 58%	103 42%	69 (31-91)
Unclassified	54 3%	30 56%	24 44%	70 (29-88)
Overall	1,617 100%	773 48%	844 52%	68 (19-99)

Figure 1a: demographic profile

Most cases of BTCs were gallbladder, which accounts for 33% of all cases. Ampullary cancers were more common among males, while gallbladder cancers were more common among females.

Figure 1b: OS by BTC location subtype →

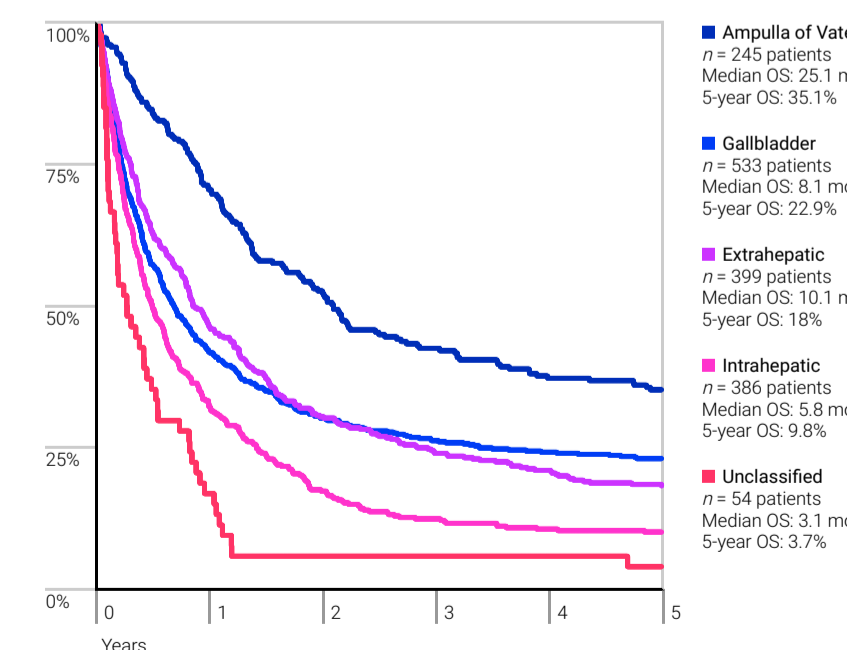


Figure 2: Survival by stage for each BTC location subtype

Figure 2a: OS by stage, all subtypes

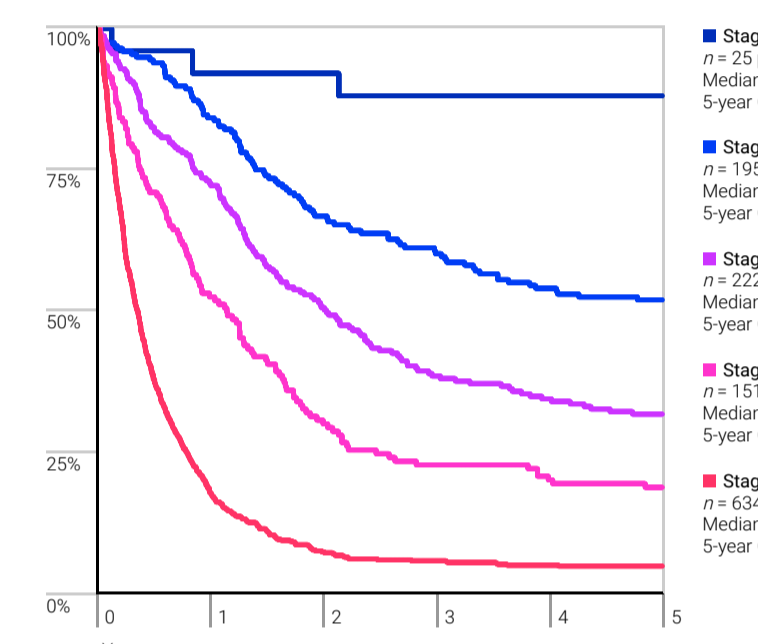


Figure 2b: OS by stage for gallbladder

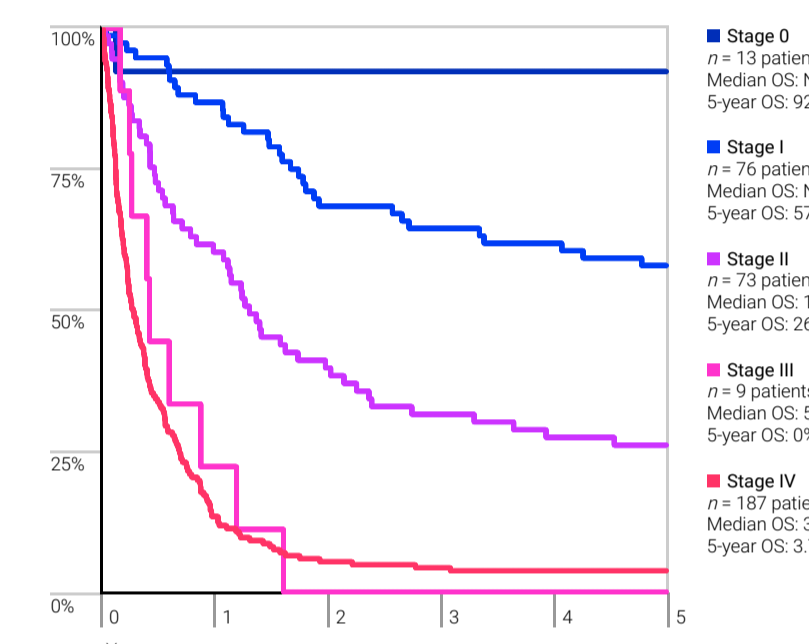


Figure 2c: OS by stage for EC

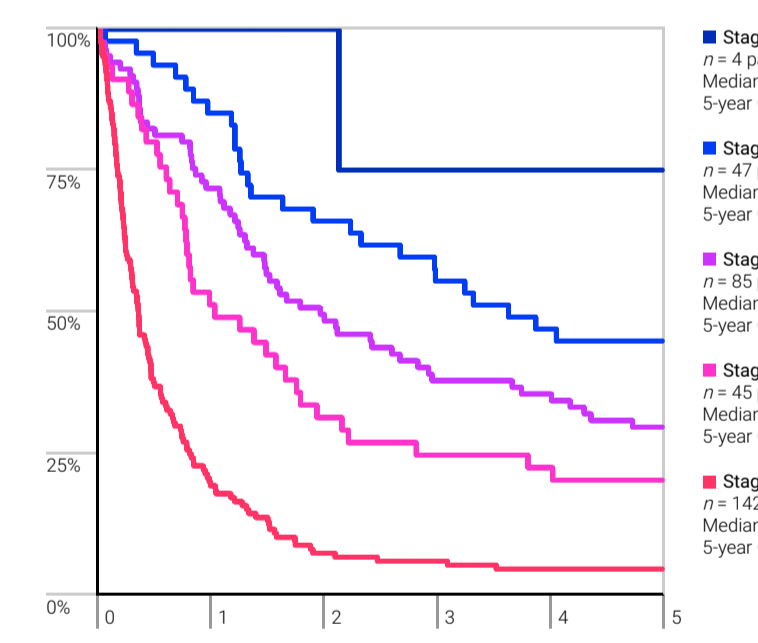


Figure 2d: OS by stage for IC

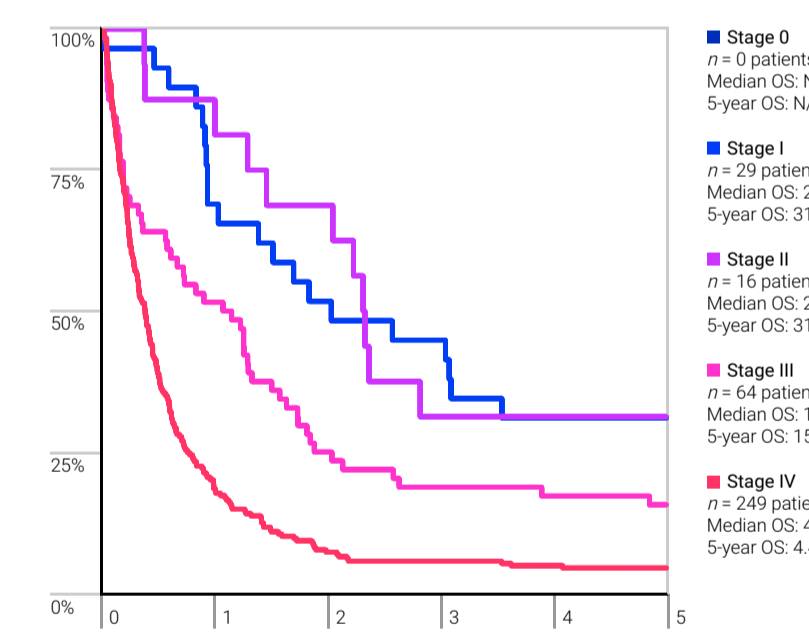


Figure 2e: OS by stage for AV

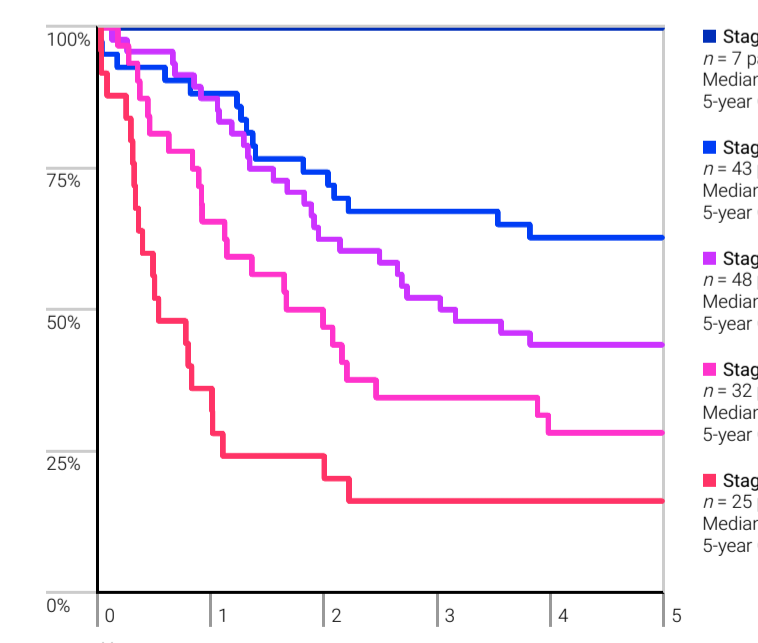


Figure 2f: OS by stage for unclassified

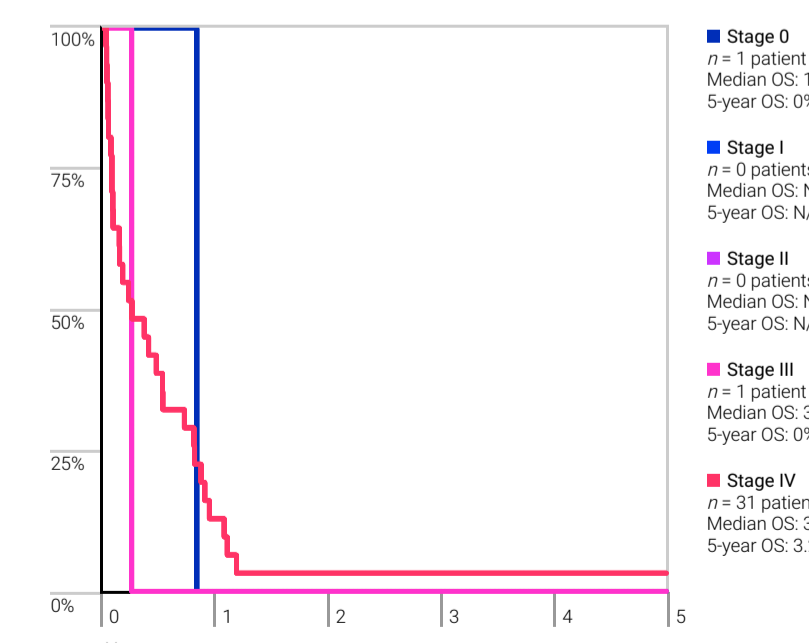


Figure 3: Survival by tumor grade for each BTC location subtype

Figure 3a: OS by grade, all subtypes

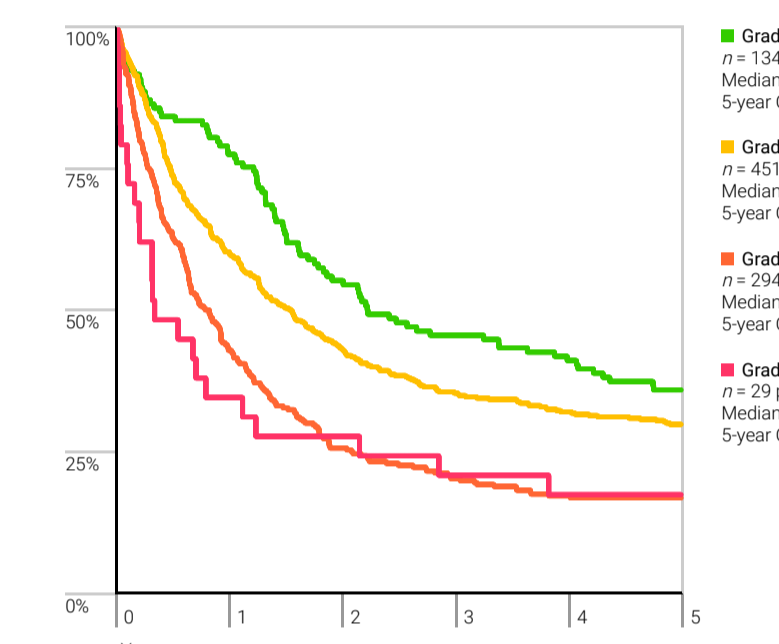


Figure 3b: OS by grade for gallbladder

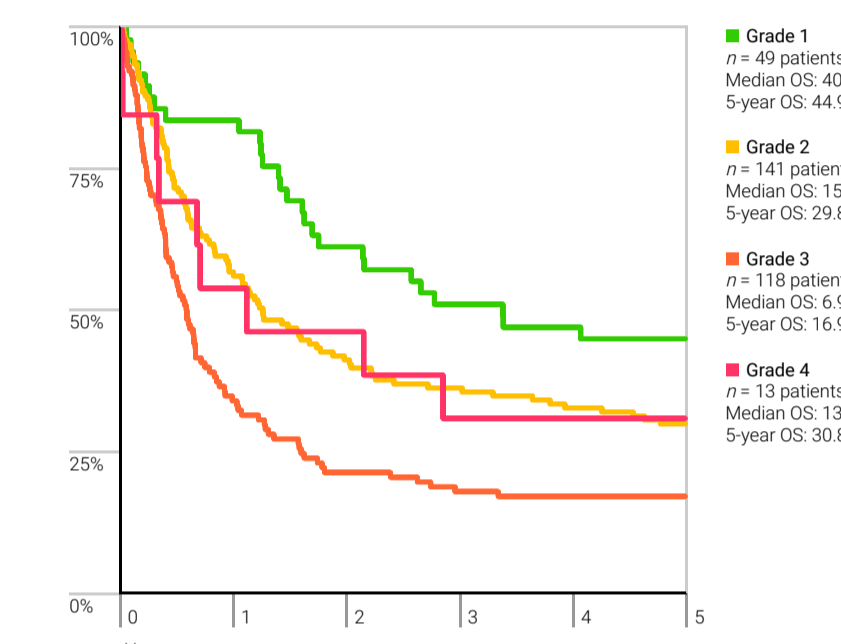


Figure 3c: OS by grade for EC

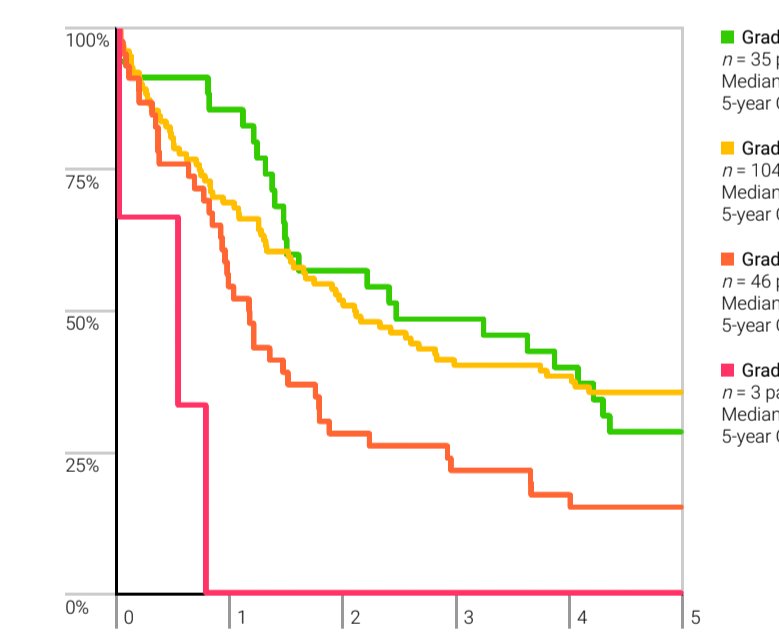


Figure 3d: OS by grade for IC

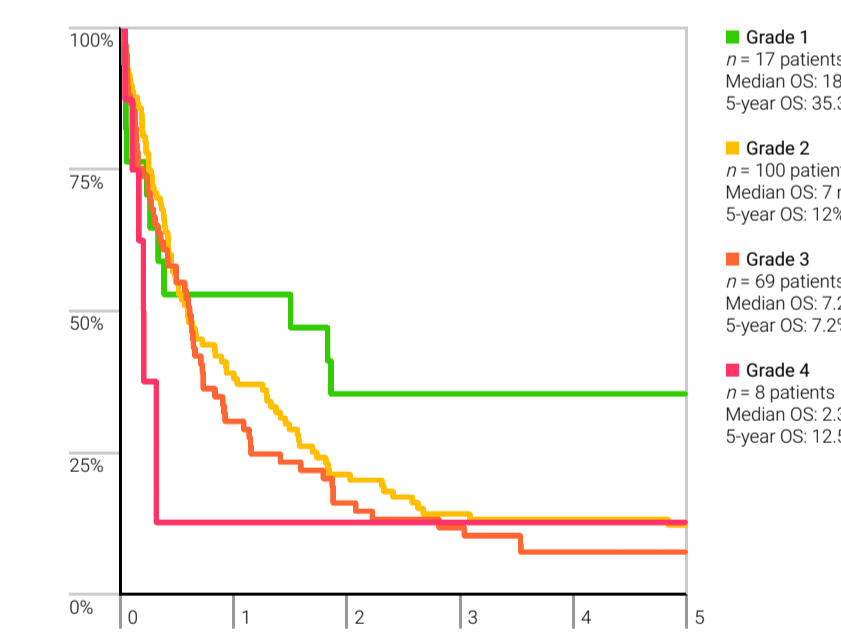


Figure 3e: OS by grade for AV

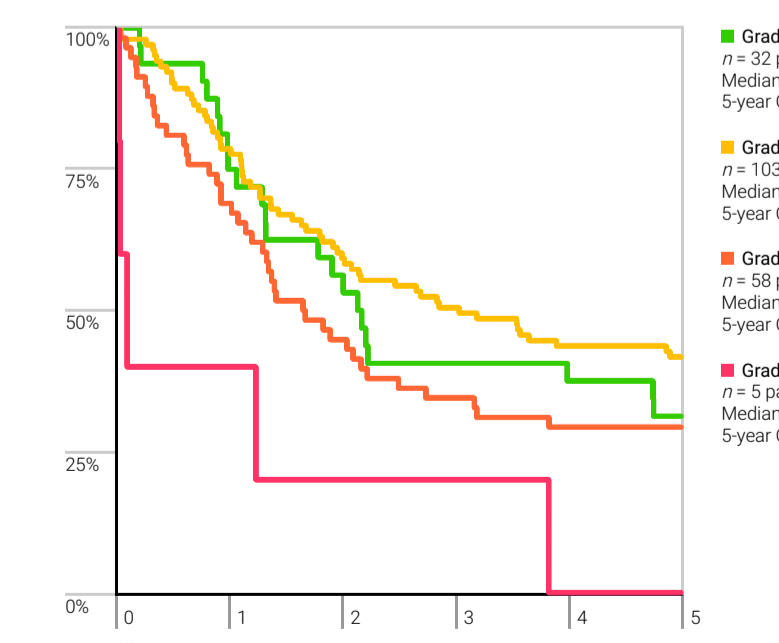


Figure 3f: OS by grade for unclassified

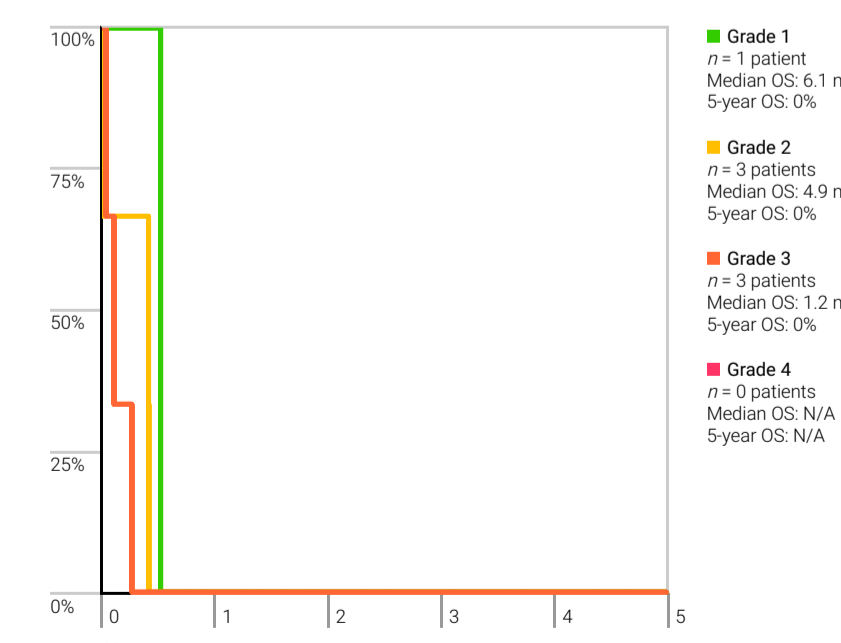


Figure 4: Survival by ECOG, resectability at diagnosis, and chemo

Figure 4a: OS by ECOG, all subtypes

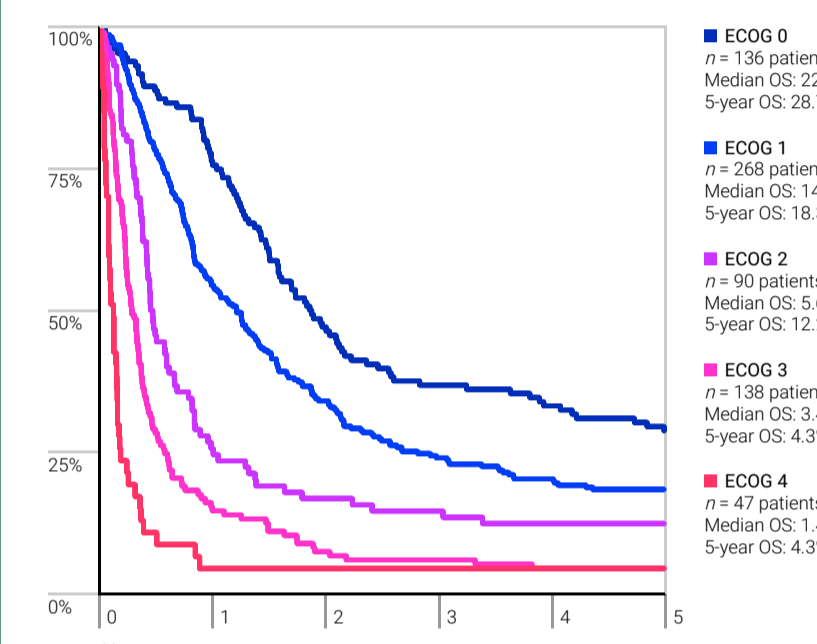


Figure 4b: OS by resectability

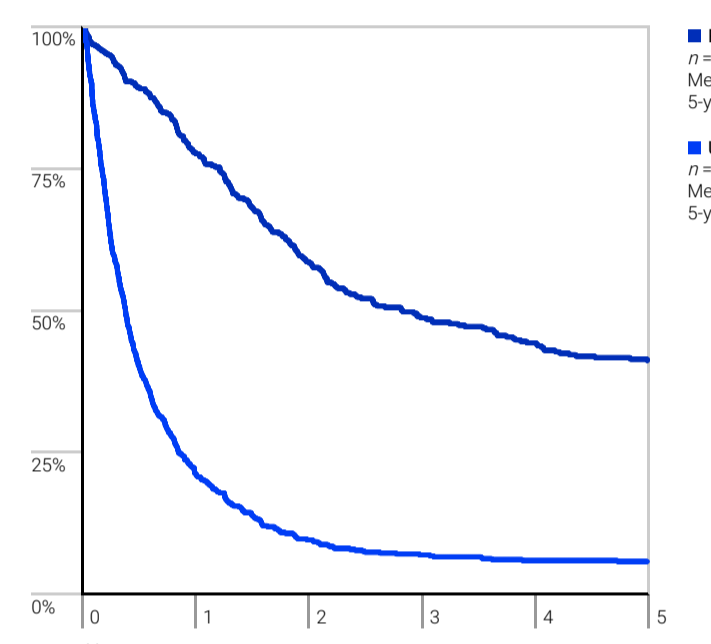
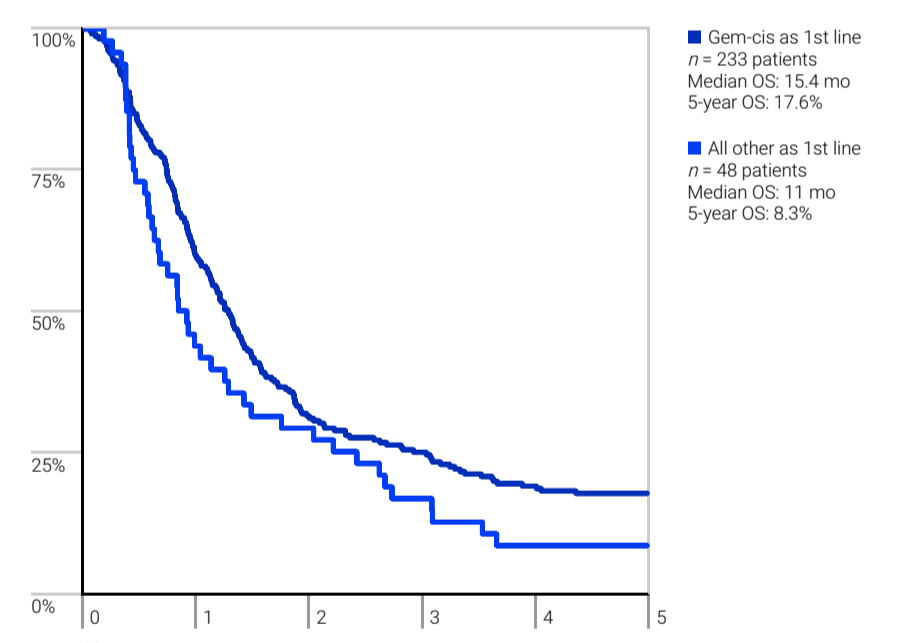


Figure 4c: OS by 1st line palliative chemo

1st LINE PALLIATIVE	n (%)	MEDIAN OS (months)
Cisplatin gemcitabine	233 85.3%	15.5
Gemcitabine	20 7.3%	12.4
Capecitabine	7 2.6%	8.1
Capecitabine gemcitabine	13 4.8%	6.9
Total	273 100%	

Above is a breakdown of patients who received first line palliative chemotherapy with their respective median overall survival. Cisplatin and gemcitabine was adopted as standard of care treatment since 2010, and now accounts for the majority of 1st line palliative chemotherapy prescribed for BTC patients.

Figure 4d: graph of OS by 1st line chemo



CONCLUSION

Patients with AV have the best prognosis compared to the other BTC. Patients with IC have the worst prognosis. Shorter survival is observed with higher stage across all BTC subtypes. Shorter survival is also observed with higher grade and poor ECOG. Patients deemed resectable at diagnosis have better survival, and those who received palliative cisplatin and gemcitabine had a better OS than reported in this regimen's pivotal phase III trial (median OS of 15.5 months versus 11.7 months, Valle et al, *NEJM* 2010). These results represent our interim analysis, with further characterization of this patient population to follow.