UNEXPECTED BURDEN OF CHOLANGIOCARCINOMA IN A PROSPECTIVE POPULATION-BASED COHORT IN GIPUZKOA PROVINCE (SPAIN: 2010–2024)

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INTRODUCTION & AIM

- Reported CCA incidence varies widely and is likely underestimated.
- Differences in case identification and coding contribute to this variability.
- Real-world population-based data integrating clinical management and outcomes remain limited.

Aim: To define real-world CCA burden, treatment patterns, and survival in Gipuzkoa (Spain).

METHODS

- All CCA diagnosis at the Gipuzkoa referral hospital were included (2010-2024).
- Clinical, treatment, and outcome data were collected.
- Age-standardized incidence (ASIR) and mortality (ASMR) were calculated using population data.
- Survival was analyzed.

KEY FINDINGS

- Prospective case identification revealed higher incidence and mortality rates than previously recognized.
- Most patients presented with advanced disease and were not candidates for curative treatment.
- Systemic therapy was the most common approach, with limited progression-free and overall survival.
- Best supportive care was frequent and associated with very poor outcomes.

CONCLUSIONS

- Prospective, clinically driven case identification reveals a substantially higher real-world burden of cholangiocarcinoma.
- Most patients present with advanced disease and remain ineligible for curative or targeted therapies, relying on conventional treatments with limited benefit.
- These findings highlight the need for earlier diagnosis and more effective therapeutic strategies.

Abbreviations: BCS, Best Supportive Care; CCA, Cholangiocarcinoma; Cis, Cisplatin; dCCA, Distal CCA; FU, Fluorouracil; Gem, Gemcitabine; iCCA, Intrahepatic CCA; Ox, Oxaliplatin; pCCA, Perihilar CCA.

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RESULTS

Patient cohort characteristics

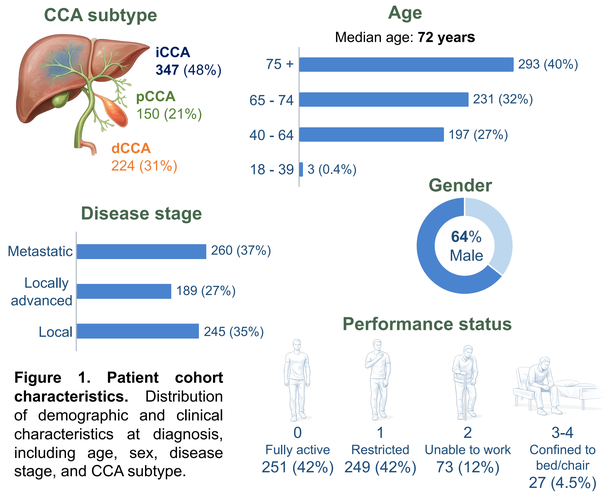


Figure 1. Patient cohort characteristics. Distribution of demographic and clinical characteristics at diagnosis, including age, sex, disease stage, and CCA subtype.

Epidemiological trends

Incidence

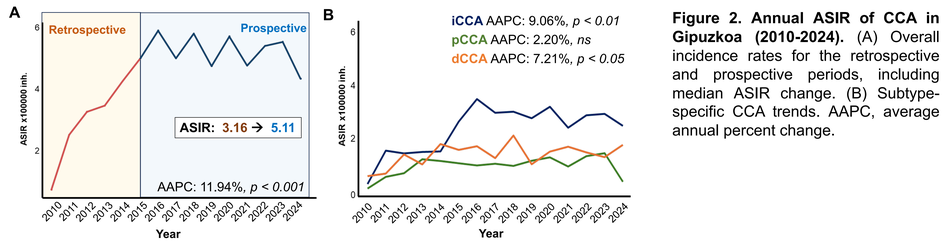


Figure 2. Annual ASIR of CCA in Gipuzkoa (2010-2024). (A) Overall incidence rates for the retrospective and prospective periods, including median ASIR change. (B) Subtype-specific CCA trends. AAPC, average annual percent change.

Mortality

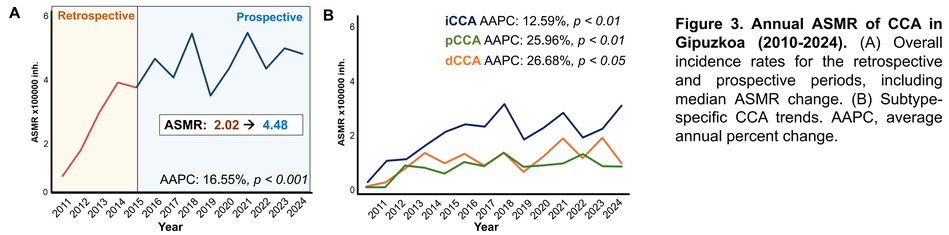


Figure 3. Annual ASMR of CCA in Gipuzkoa (2010-2024). (A) Overall incidence rates for the retrospective and prospective periods, including median ASMR change. (B) Subtype-specific CCA trends. AAPC, average annual percent change.

Therapeutic management and outcomes

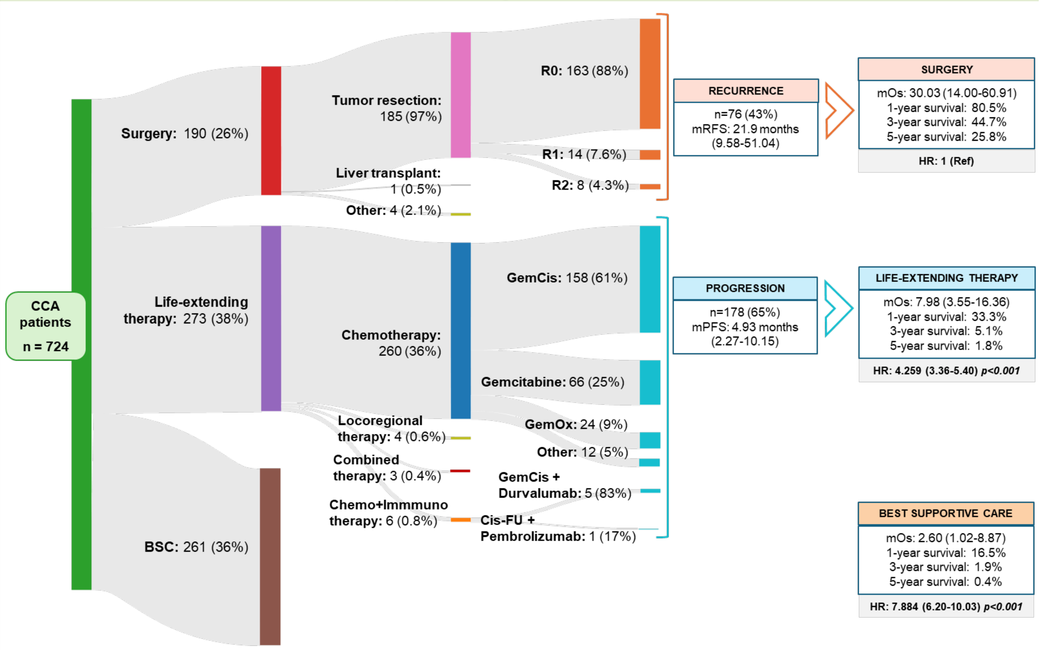
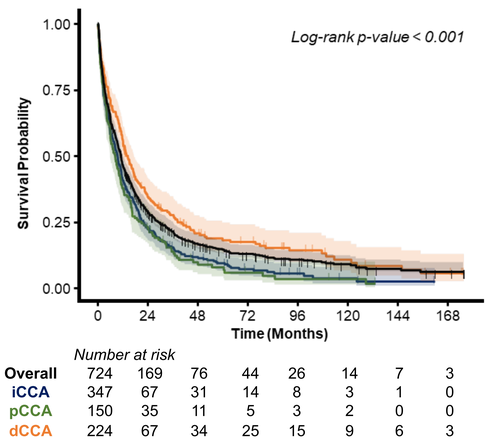


Figure 4. Sankey diagram illustrating treatment pathways and clinical outcomes in the cohort (n = 724). The figure shows initial treatment allocation and subsequent clinical trajectories, including recurrence and progression. Overall survival (OS), recurrence-free survival (RFS), and progression-free survival (PFS) are reported, together with 1-, 3-, and 5-year survival rates. Comparisons between treatment groups were performed using a Cox proportional hazards model. Hazard ratios (HR), 95% confidence intervals (CI), and p-values are shown.

Survival analysis



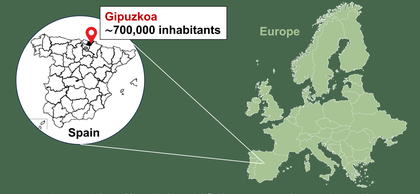
Events/Total	Median OS (Q1-Q3)	HR (95%IC) P-value
636/724	10.16 mo (3.0 - 22.7)	-
311/347	9.26 mo (2.6 - 20.2)	1 (Ref)
140/150	8.33 mo (2.7 - 20.9)	1.07 (0.87-1.3), *ns*
182/224	13.06 mo (4.8 - 30.6)	0.69 (0.58-0.83), *p<0.001*

Figure 5. Kaplan-Meier overall survival stratified by CCA subtype. Survival differences were assessed using log-rank test. Median OS displayed for each group. Hazard Ratios were assessed using the Cox Regression model.

PATIENT ORIENTED SUMMARY

What did we study?

We analyzed all patients diagnosed with cholangiocarcinoma (bile duct cancer) in Gipuzkoa (a region in Spain) between 2010 and 2024 at the main referral hospital.



By systematically identifying and reviewing every case, we aimed to better understand how common this disease is, how it is treated, and what outcomes patients experience.

What did we find?

This cancer may be more common than previously thought when patients are carefully identified and recorded.

Most patients are diagnosed at advanced stages, when curative surgical treatment is no longer possible. As a result, many patients receive standard treatments, which often have limited effectiveness.

Why is this important?

These results show that improving how patients are identified and diagnosed can reveal the true impact of this disease.

They also highlight the need for earlier diagnosis, better access to specialized care, and the development of more effective treatments to improve patient outcomes.

What does this mean for patients?

Earlier diagnosis is key to increasing the chances of receiving curative treatment.

Being evaluated in specialized centers may improve access to appropriate care and treatment options.

Acknowledgements

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