

The expanding role of immunotherapy in the treatment of gastro-intestinal cancers

Practice-changing results with durvalumab-based therapy in patients with advanced hepatocellular and biliary tract cancer

Over the last decade, immunotherapy (IO) has changed the treatment landscape for many cancer types. Also in the management of gastrointestinal (GI) cancer, IO is becoming increasingly important. In this respect, two new IO indications in GI cancer were recently EMA approved and reimbursed in Belgium: durvalumab in combination with cisplatin and gemcitabine for the first line treatment of advanced biliary tract cancer (BTC) and dual IO therapy with a combination of tremelimumab and durvalumab as a first line treatment option for patients with advanced hepatocellular carcinoma (HCC). During the Belgian Group of Digestive Oncology (BGDO) session of the 2023 Belgian Week of gastroenterology, Astra-Zeneca organized a satellite symposium discussing the clinical basis for these new indications. During the symposium **Prof. Jeroen Dekervel (University Hospitals Leuven)** discussed the results of the **TOPAZ-1** trial, evaluating first line durvalumab plus gemcitabine/cisplatin in patients with advanced BTC after which **Prof. Ivan Borbath (Cliniques Universitaires Saint-Luc, Brussels)** turned the attention to HCC and discussed the results of the **HIMALAYA** study, assessing the potential of tremelimumab plus durvalumab in the first line setting of advanced HCC.

Durvalumab plus chemotherapy as new standard first-line treatment for advanced BTC

BTC is a highly aggressive and heterogeneous disease. This heterogeneity is amply illustrated by the marked differences in gene expression profiles of intrahepatic cholangiocarcinoma (iCCA), extrahepatic CCA (eCCA) and gallbladder cancer (GBC).¹ In BTC, treatment decisions are mainly steered by the operability of the tumour. Based on the results of the ABC-02 trial, the first-line standard of care (SoC) for patients with advanced unresectable BTC has consisted of gemcitabine and cisplatin (GemCis) since 2010.² In the ABC-02 study, GemCis was shown to provide a significant survival benefit over gemcitabine alone (11.7 *vs.* 8.1 months, respectively; HR: 0.64; $p < 0.001$).^{2,3} For patients with disease progression on or following first-line GemCis, the second-line treatment generally consists of 5-fluoruracil (5-FU) with oxaliplatin (FOLFOX) or with irinotecan or nanoliposomal irinotecan [nal-IRI] (FOLFIRI).² In recent years, detailed genetic analyses of BTC have revealed recurrent oncogenic driver mutations in subgroups of BTC patients. In this, the main targetable aberrations in patients with iCCA consist of *IDH* and *FGFR*, while *HER2* aberrations are mainly encountered in eCCA and GBC tumours.¹ As a result of these findings, several clinical trials have success-

fully evaluated targeted therapies in specific subgroups of BTC patients. This includes the use of selective *FGFR* inhibitors (i.e., pemigatinib), inhibitors of *IDH* (i.e., ivosidininib) and dual *BRAF/MEK* targeting (i.e., dabrafenib-trametinib). For patients with advanced BTC harbouring a *HER2* mutation, promising responses have also been observed with a combination of pertuzumab and trastuzumab.² Until recently, the role of IO in the treatment of BTC was limited to patients with mismatch repair deficiency and/or a microsatellite instability high (MSI/dMMR) status. For this patient population and for patients with a high tumour mutational burden (≥ 10 mut/Mb), pembrolizumab is a valuable treatment option.^{1,2}

In clinical practice, however, patients with targetable genetic alterations only represent a small portion of all patients presenting advanced BTC. For the majority of advanced BTC patients, the SoC first line treatment therefore remained GemCis for more than a decade. However, based on the recent publication of the results of the TOPAZ-1 trial, the role of IO in the management of BTC was dramatically expanded. TOPAZ-1 is the first global phase 3 study evaluating a combination of IO and GemCis as first-line treatment for patients with advanced BTC. In this trial, a total of 685 previously untreated, unresectable BTC patients were randomly assigned (1:1) to durvalumab or placebo, both combined with GemCis.⁴ Of note, also patients

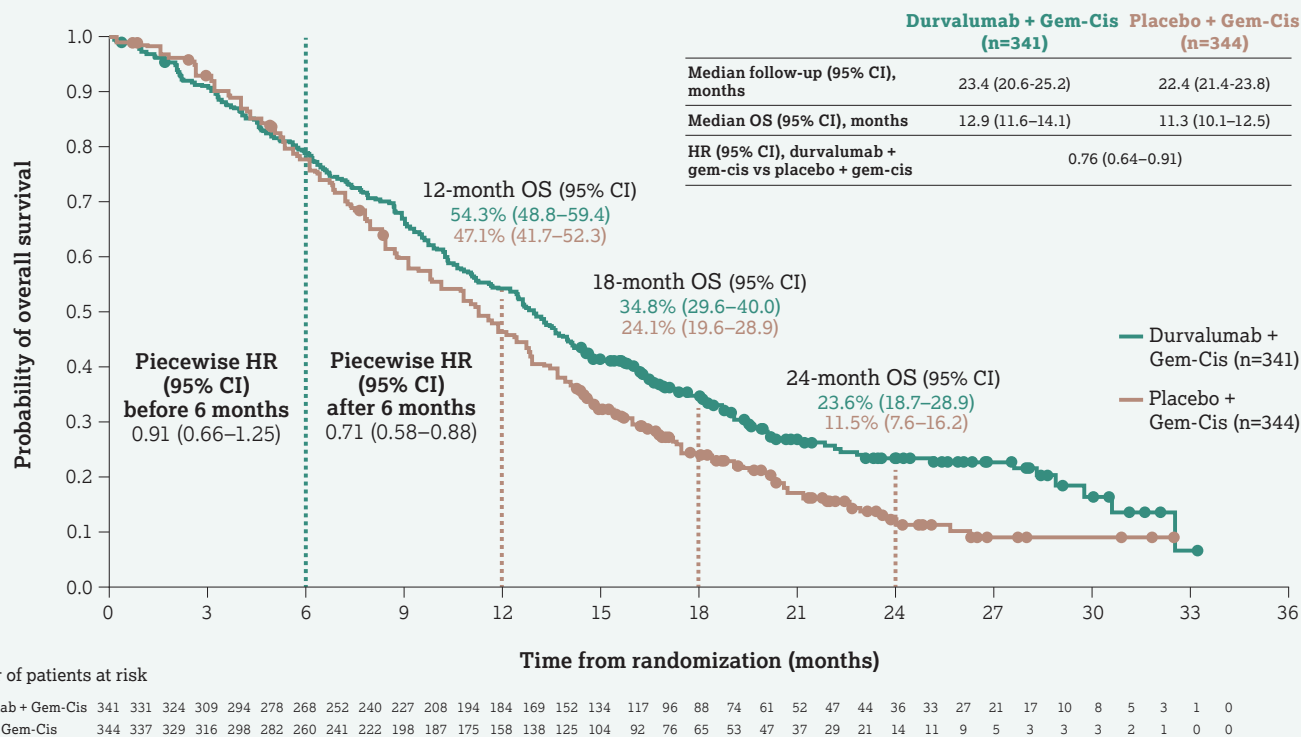


Figure 1. Updated overall survival results from the TOPAZ-1 trial.^{6,7}

CI: confidence interval, Gem-Cis: gemcitabine-cisplatin, HR: hazard ratio, OS: overall survival.

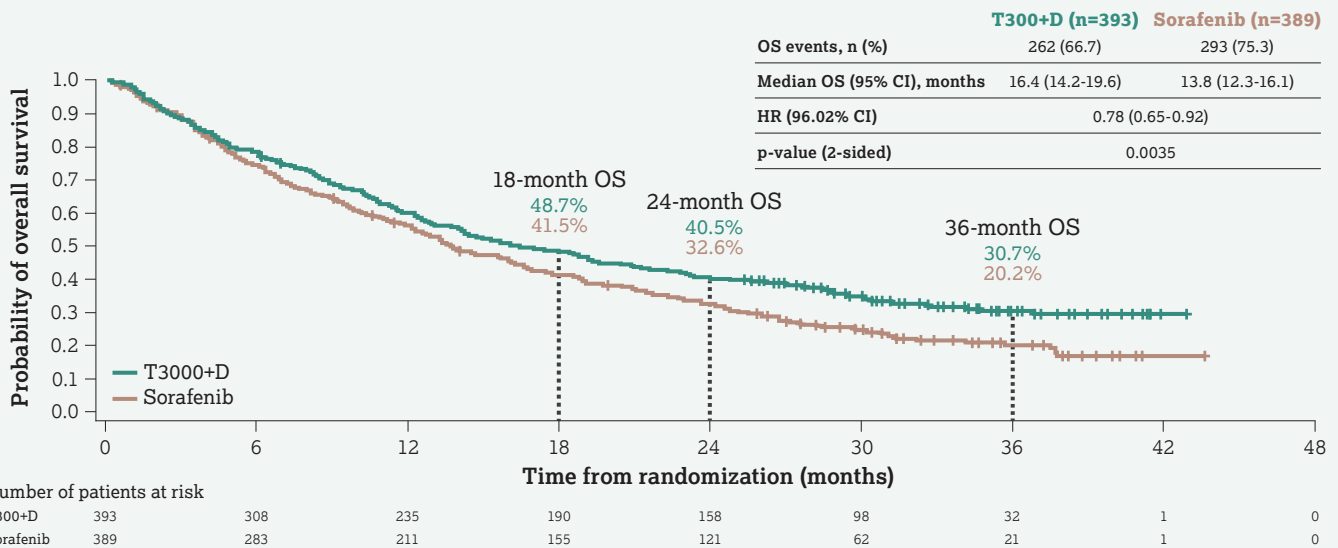
with disease recurrence within 6 months after surgery or completion of adjuvant therapy were eligible for the study. Patients were initially treated with GemCis in combination with durvalumab (1500 mg IV, q3w) or placebo for up to 8 cycles, followed by maintenance therapy with durvalumab (1500 mg IV, q4w) or placebo. The study showed that patients in the durvalumab + GemCis arm had a significantly longer median overall survival (OS, primary endpoint) than patients treated with placebo + GemCis (12.8 vs. 11.5 months; HR[95%CI]: 0.80[0.66-0.97]; p=0.021).⁵ In an updated analysis of this trial with 6.5 months of additional follow-up, the HR for OS was further improved in favour of the durvalumab arm (HR[95%CI]: 0.76[0.64-0.91]) (Figure 1).^{6,7} The continuously diverging Kaplan-Meier curves and the increasing difference in OS rate between the two treatment arms over time (34.8% vs. 24.1% at 18 months to 23.6% vs. 11.5% at 24 months) underscores the potential for a long-term benefit with durvalumab + GemCis in this setting.^{6,7} Importantly, the OS benefit was shown to be consistent across all subgroups. Apart from improving OS, durvalumab + GemCis also significantly delayed disease progression compared to placebo + GemCis with a median progression-free survival (PFS) of 7.2 and 5.7 months, respectively. In addition, also the overall response rate (ORR, 26.7% vs. 18.7%) and duration of response (DoR, 6.4 vs. 6.2 months) were significantly better with durvalumab + GemCis than with placebo + GemCis.

Regarding safety, adding durvalumab to chemotherapy did not increase toxicity. The most common grade 3/4 treatment-related adverse events (AEs) in the durvalumab and placebo groups consisted of anaemia (23.7% vs. 22.5%), a neutrophil count decrease (21% vs. 25.7%) and neutropenia (20.1% vs. 21.1%).⁸

In summary, adding durvalumab to GemCis in first line advanced BTC significantly improves OS compared to GemCis alone, without increasing toxicity. In this, the increasing benefit in OS rate over time shows that a subgroup of patients derives a long-term benefit of this combination. As such, TOPAZ-1 provides compelling evidence to establish durvalumab + GemCis as the new standard of care in the first line treatment of patients with advanced BTC.

Dual immunotherapy with tremelimumab and durvalumab as first line therapy for advanced HCC

The management of patients with HCC is based on the Barcelona Clinic Liver Cancer (BCLC) algorithm, which classifies HCC patients into five stages (0, A, B, C, and D) and allocates them to either curative or palliative therapy based on tumour status, liver function (Child-Pugh score) and performance status.⁹ In addition to this, also the HCC aetiology (i.e., viral HCC [HBV or HCV], alcoholic fatty liver disease [AFLD] related HCC, HCC related to metabolic-related fatty liver disease [MAFLD]) can have an impact on the efficacy of certain treatment options and is often taken into consideration. In Europe, the development of HCC is primarily associated with alcohol consumption and HCV infections. This is also the case for the United States, but there we also see a rising incidence of MAFLD-related HCC. In contrast, in Asia and Africa, HCC primarily has a viral aetiology.¹⁰



Data cut-off: August 27, 2021. Median duration of follow-up was 33.18 (95% CI, 31.74-34.53) months for T300+D and 32.23 (95% CI, 30.42-33.71) months for sorafenib. CI, confidence interval; HR, hazard ratio; OS, overall survival; T300+D, tremelimumab 300 mg x 1 dose + durvalumab 1500 mg Q4W.

Figure 2. Overall survival results from the HIMALAYA trial.^{10,12}

CI: confidence interval, HR: hazard ratio, mo: months, OS: overall survival, T300 + D: tremelimumab 300 mg plus durvalumab.

The long-standing SoC first line treatment for patients with advanced HCC consisted of sorafenib. This picture changed a couple of years ago with the publication of the IMbrave150 data. In this trial, the combination of atezolizumab and bevacizumab (atezo/bev) was shown to significantly prolong the OS *vs.* sorafenib in patients with advanced HCC (median OS: 19.2 *vs.* 13.4 months (HR[95%CI]: 0.66[0.52-0.85];p=0.0009), establishing the combination of atezo/bev as the new SoC in this setting. Nevertheless, a subgroup analysis of this trial indicated an apparent lack of benefit for atezo/bev over sorafenib in the subgroup of patients with a non-viral HCC aetiology (HR:1.05).¹¹ In the quest for alternative treatment options for patients with advanced HCC, researchers evaluated dual immune checkpoint inhibition in this setting. In other tumour types, like melanoma or renal cell carcinoma, the combination of an anti-CTLA-4 and an anti-PD-(L)1 has shown to enhance the immune response against cancer cells through their complementary mechanisms resulting in long-term tumour responses. In fact, while anti-CTLA4 therapy can block the suppressive T-cell signalling in the lymph node, targeting PD-(L)1 inhibits immunosuppressive interactions in the tumour microenvironment. Based on this rationale, the phase 3 HIMALAYA trial evaluated the combination of tremelimumab (anti-CTLA-4) with durvalumab (anti-PD-L1) as first line treatment for patients with unresectable HCC (BCLC B and C).¹² In 2 arms of this study, patients were randomly assigned to receive a single dose of tremelimumab (300 mg) in combination with durvalumab (1500mg q4w) (STRIDE regimen) (N=393) or sorafenib monotherapy (N= 389).¹² In this study, the STRIDE regimen significantly improved the

OS compared to sorafenib with a median OS of 16.4 and 13.8 months, respectively (HR[95%CI]: 0.78[0.65-0.92]; p=0.0035). The OS benefit of the STRIDE regimen was also reflected by the landmark OS analyses. At the 3 year landmark, this translated into an OS rate of 30.7% for STRIDE as compared to 20.3% with sorafenib (*Figure 2*). Importantly, the benefit of STRIDE over sorafenib was noted across most subgroups, including non-viral HCC variants, and irrespective of the level of PD-L1 expression.

Overall, the safety profile of STRIDE was manageable. Grade ≥ 3 haemorrhage was reported in 0.5 *vs.* 1.6% of the patients receiving STRIDE and sorafenib, respectively. In patients receiving STRIDE, immune-mediated events requiring an intervention with high-dose glucocorticoids or treatment discontinuation occurred in 21% and 5.7% of patients, respectively. The most common immune-mediated events with the IO-based therapy consisted of hepatic events, diarrhoea/colitis, and dermatitis/rash.

In conclusion, the HIMALAYA trial revealed that the combination of single dose tremelimumab with 4-weekly dosing of durvalumab (the STRIDE regimen) prolongs OS compared to sorafenib in patients with advanced HCC, regardless of PD-L1 expression and HCC aetiology.¹⁰ As such, the impressive results obtained with the STRIDE regimen in the HIMALAYA trial establish this regimen as a critical component of the first line treatment arsenal for patient with advanced HCC.

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