Editorial

Optimizing the management of hepatobiliary neoplasms: a multidisciplinary and molecular challenge

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Hepatobiliary neoplasms represent a group of common, biologically and clinically diverse diseases. Hepatocellular carcinoma (HCC) is the second leading cause of death in men worldwide with less than 20% 5-year survival rates (1). Less common biliary tract cancers, including intra- and extrahepatic cholangiocarcinoma and cancers of the gallbladder, are likewise associated with poor long-term survival. Late stage at diagnosis, underlying liver dysfunction, and the lack of highly active systemic therapies represent the major challenges driving these historical outcomes. Technological advances in locoregional modalities and major strides in understanding the molecular pathogenesis of these cancers herald a new era of therapeutic opportunities. In this special issue of *Journal of Gastrointestinal Oncology (JGO)*, a variety of comprehensive reviews highlight the multidisciplinary advancements and efforts required for optimizing care for patients with hepatobiliary neoplasms.

The current management of HCC is driven by the burden of disease at presentation and the degree of underlying liver dysfunction as classified by the Barcelona Clinic Liver Cancer Staging (BCLC) system. Despite favorable long-term outcomes for the minority of patients who are able to undergo curative resection or liver transplantation, the vast majority present with disease that is not amenable to these modalities (2). Thus, early detection and ideally prevention are necessary to improve global HCC outcomes. It is in this context Dr. Zamor and colleagues provide a timely discussion on the etiologic differences in virally mediated HCC. Furthermore, they describe the evolving epidemiological and viral specific screening recommendations and the role of antiviral therapies on HCC carcinogenesis and prevention.

For patients that are medically inoperable or demonstrate disease outside of transplant criteria, an increasing number of local ablative therapies remain the treatment of choice. It is in this setting that the function of multidisciplinary management between medical oncologists, hepatobiliary surgeons, radiation oncologists, and interventional radiologists is underscored. Dr. Pyko *et al.* provide a state of the art overview of locoregional options focusing on the current evidence base guiding transarterial therapies, and how systemic therapy may be integrated with them. Their review is buttressed by Dr. Wang's paper reviewing intra-arterial radiation. Additionally, Dr. Baker and colleagues describe the extensive Levine Cancer Institute experience with operative microwave ablation for HCC. Notably, this institutional series compares their earlier experience and highlights the importance of intraoperative ultrasound on improving ablative outcomes (3). To complete the discussion of local therapeutics, Lischalk *et al.* extensively review the role of radiation techniques in hepatobiliary neoplasms.

Despite these advances in locoregional therapy, intrahepatic and distant failure rates remain frequent causes of death in patients with HCC. The reason for these suboptimal outcomes remains to be fully understood, however, refined patient selection based on tumor specific molecular characterization is being increasingly realized. With this background Dr. Desai and colleagues provide a broad overview of the major molecular pathways involved in HCC carcinogenesis. They provide a detailed review of some key completed molecularly targeted trials and the ongoing novel trials whose results are eagerly awaited. Finally, an updated literature review of cytotoxic therapies in HCC is revisited. Despite the many "negative" studies described herein that have tempered the earlier enthusiasm for targeted

therapies in HCC, each provides an additional level of understanding that future molecularly targeted trials and basic research will improve upon.

Biliary tract cancers represent an area of unmet need in oncologic care. However, the evidence base in this disease is quite modest due to the rarity of these tumors and the near universal inclusion of multiple distinct tumor types in the available clinical trial experience. The past decade has revealed with increasing clarity the genetic distinctions between intra- and extrahepatic cholangiocarcinoma and gallbladder cancers. Although it remains uncertain if this improved biologic understanding can be harnessed therapeutically, Dr. Ahn *et al.* and Dr. Sahu *et al.* exam the varied genomic landscape and provide a review of the completed and pending early phase trials of a variety of novel non-cytotoxic therapies. Finally, Dr. Gong and colleagues provide a clinically relevant discussion on the use of systemic therapy in patients with abnormal hepatic function.

Clearly, much must be learned to improve the outcomes for patients with hepatobiliary neoplasms. This series, written by experts from a variety of oncologic specialties, highlights the imperative of coordinated multidisciplinary efforts both in the clinic and, most importantly, in future research endeavors that incorporate the growing body of molecular, technical, and pharmacologic advances.

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Footnote

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References

1. 1. Torre LA, Siegel RL, Ward EM, et al. Global Cancer Incidence and Mortality Rates and Trends--An Update. Cancer Epidemiol Biomarkers Prev 2016;25:16-27.
2. El-Serag HB. Hepatocellular carcinoma N Engl J Med 2011;365:1118-27.
3. Swan RZ, Sindram D, Martinie JB, et al. Operative microwave ablation for hepatocellular carcinoma: complications, recurrence, and long-term outcomes. J Gastrointest Surg 2013;17:719-29.

