

IN BRIEF

LIVER CANCER**Lenvatinib non-inferior to sorafenib for hepatocellular carcinoma**

Systemic therapies for patients with advanced hepatocellular carcinoma (HCC) are limited, with only sorafenib approved as a first-line agent. Lenvatinib, an inhibitor of VEGFR1–3, PDGFR α , FGFR1–4, RET and KIT, had previously shown activity against HCC in a phase II trial. In an open-label, phase III, multicentre non-inferiority trial in patients with unresectable, untreated HCC ($n = 954$), Kudo *et al.* found that there was no difference in overall survival (OS) between those given sorafenib (median OS 12.3 months, 95% CI 10.4–13.9) or lenvatinib (median OS 13.6 months, 95% CI 12.1–14.9). Lenvatinib was also associated with longer median progression-free survival and median time-to-progression than sorafenib.

ORIGINAL ARTICLE Kudo, M. *et al.* Lenvatinib versus sorafenib in first-line treatment of patients with unresectable hepatocellular carcinoma: a randomised phase 3 non-inferiority trial. *Lancet* [https://doi.org/10.1016/S0140-6736\(18\)30207-1](https://doi.org/10.1016/S0140-6736(18)30207-1) (2018)

VIRAL HEPATITIS**A new model for HBV infection of primary human hepatocytes**

The development of new therapies for hepatitis B is dependent on scalable, durable models that accurately recapitulate human physiology and HBV infection. In a new study, Ortega-Prieto *et al.* designed a 3D microfluidic system to culture primary human hepatocytes (PHHs). The system, consisting of a perfused bioreactor and collagen-coated polystyrene scaffolds seeded with PHHs, was able to maintain PHH morphology, viability and synthesis of hepatocyte-specific markers for at least 40 days. Importantly, PHHs cultured in this fashion were readily infected by patient-derived HBV; compared with existing models such as hepatic spheroids, 10,000-fold lower levels of HBV were required to infect PHHs cultured in the new system. PHH responses to HBV infection were also found to reflect host responses in patient or chimpanzee tissue samples.

ORIGINAL ARTICLE Ortega-Prieto, A. M. *et al.* 3D microfluidic liver cultures as a physiological preclinical tool for hepatitis B virus infection. *Nat. Commun.* **9**, 682 (2018)

SURGERY**Describing the global burden of infection after gastrointestinal surgery**

Surgical site infection (SSI) is the most common complication after surgery and represents a substantial global healthcare burden. Planning on how best to reduce SSI at an international level has been hampered by a paucity of data, particularly from countries with a low or intermediate Human Development Index (HDI). To address this knowledge deficit, the GlobalSurg Collaborative — a body representing practicing surgeons around the world — conducted a prospective cohort study of SSI after gastrointestinal surgery in 343 hospitals worldwide. SSI incidence varied by country HDI, with 23.2% of patients in low-HDI settings experiencing an SSI versus 9.4% of patients in high-HDI settings. For cases in which a microbiology culture result was available, SSIs resistant to the prophylactic antibiotic used were found in 35.9% of patients in low-HDI countries, compared with only 16.6% of patients in high-HDI countries.

ORIGINAL ARTICLE GlobalSurg Collaborative. Surgical site infection after gastrointestinal surgery in high-income, middle-income, and low-income countries: a prospective, international, multicentre cohort study. *Lancet Infect. Dis.* [https://doi.org/10.1016/S1473-3099\(18\)30101-4](https://doi.org/10.1016/S1473-3099(18)30101-4) (2018)