**HCC Detection**
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**Overview**

Hepatocellular carcinoma (HCC) is the sixth most common cancer worldwide. Annual incidence exceeds 550,000. Mortality is high; most patients survive less than two years after diagnosis. Ablative and surgical treatments can prolong survival. Treatments are most effective for small HCCs and early-stage disease. Hence, accurate diagnosis of small HCC is important. Non-invasive diagnosis of HCC, however, is challenging, especially in patients with advanced cirrhosis, in which structural and physiological alterations impair detection of tumor nodules. The three most common imaging modalities for non-invasive diagnosis of HCC are ultrasound (US), computed tomography (CT), and magnetic resonance imaging (MRI). A recent meta-analysis by Colli et al reviewed the pooled per-patient sensitivities and specificities of imaging modalities for HCC. Based on this meta-analysis, MRI has the highest per-patient sensitivity and US has the highest per-patient specificity.

All conventional imaging modalities, however, have limited per-lesion sensitivity and poor staging accuracy and there is a need for new or more advanced techniques.

This lecture will review non-invasive detection of HCC. As most HCCs occur in patients with cirrhosis and as the imaging-based diagnosis of HCC is most challenging in cirrhosis, emphasis will be placed on HCC detection in the cirrhotic liver.

The objectives are listed below.

**Objectives:**

1. Understand the need for accurate non-invasive diagnosis and staging of HCC in cirrhosis
2. Review the spectrum of cirrhosis-associated hepatocellular nodules and pseudo-lesions
3. Review diagnostic criteria for HCC in cirrhotic liver using extra-cellular contrast agents
4. Understand the limitations of extra-cellular agents for diagnosis of HCC in cirrhotic liver
5. Future directions
   b. Standardized Liver Imaging Reporting And Data System

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**References:**