**Perfusion quantification and hepatic function with Gd-EOB-DTPA: hepatic fibrosis and hepatocellular transport**

In the asymptomatic hepatocyte, the uptake and intracellular concentration of Gd-EOB-DTPA depends on the activity of different hepatic transporter proteins. The different transporter mechanisms are increasingly being used for diagnostic purposes. Liver biopsy remains the reference for the underlying cirrhosis. Consequently, non-invasive techniques are being developed. Pharmacokinetic modeling revealed not only the quantification of hepatic perfusion, but also the evaluation of the hepatocyte function, since we could distinguish the different stages of fibrosis. At MRI, increasing fibrosis was associated with progressive change from portal to arterial perfusion, a decrease in hepatocellular Gd-EOB-DTPA uptake, and an increase in the hepatobiliary fraction. The hepatic uptake fraction had better diagnostic performances than the quantitative hepatic excretion parameters for imaging liver fibrosis. As a result from less tissue exposition, we quantified hepatic perfusion and hepatic functions by means of dynamic Gd-EOB-DTPA, and correlated our findings with the immunohistochemical characterization of hepatic transporters. We prospectively investigated 42 patients with different stages of liver fibrosis who underwent dynamic Gd-EOB-DTPA contrast-enhanced liver MRI. The hepatic uptake fraction had better diagnostic performances than the quantitative hepatic excretion parameters, while the semi-quantitative hepatic excretion parameters, such as signal-intensity measurements needs to be considered with caution, since signal-intensity measurements need to be corrected for the contribution of the blood pool signal. In the asymptomatic hepatocyte, the uptake and intracellular concentration of Gd-EOB-DTPA depends on the activity of different hepatic transporter proteins. The different transporter mechanisms are increasingly being used for diagnostic purposes. Liver biopsy remains the reference for the underlying cirrhosis. Consequently, non-invasive techniques are being developed. Pharmacokinetic modeling revealed not only the quantification of hepatic perfusion, but also the evaluation of the hepatocyte function, since we could distinguish the different stages of fibrosis. At MRI, increasing fibrosis was associated with progressive change from portal to arterial perfusion, a decrease in hepatocellular Gd-EOB-DTPA uptake, and an increase in the hepatobiliary fraction. The hepatic uptake fraction had better diagnostic performances than the quantitative hepatic excretion parameters for imaging liver fibrosis. As a result from less tissue exposition, we quantified hepatic perfusion and hepatic functions by means of dynamic Gd-EOB-DTPA, and correlated our findings with the immunohistochemical characterization of hepatic transporters. We prospectively investigated 42 patients with different stages of liver fibrosis who underwent dynamic Gd-EOB-DTPA contrast-enhanced liver MRI. The hepatic uptake fraction had better diagnostic performances than the quantitative hepatic excretion parameters, while the semi-quantitative hepatic excretion parameters, such as signal-intensity measurements needs to be considered with caution, since signal-intensity measurements need to be corrected for the contribution of the blood pool signal.

**Scientific Session: Abdominal Viscera**

**March Wednesday, 20.10.10–20.10.20: Room B**

**SS 5a Noninvasive Multi-parametric imaging and MR-guided treatment**

Moderator: S.(undefined) Church; Eindhoven, Netherlands

- **Keynote Lecture:**
  - D. Beige; Tübingen

  **Perfusion quantification and hepatic function with Gd-EOB-DTPA: hepatic fibrosis and hepatocellular transport**

  - C. A. R. Luning-Pottok; J. H. van Beurden; C. Temporini; C. Pastor; Louwman,UM; Cdby/TH; Vlietstra,UM; CR; Genova/CI

**EuroSafe Imaging Session**

**Wednesday, February 28, 16.00–17.30: Room M 1**

**E. J. Adam; London/UK**

**Chairperson’s introduction**

**N. Denjoy; Brussels/BE**

**The technical approach: the gap to be closed**

**G. Frija; Paris/FR**

**The clinical approach: the gap to be closed**

**D. Regge; Turin/IT**

**The clinical audit: the missing link**

**A. Filippone; Chieti/IT**

**The regulatory approach**

**The European Commission’s perspective and update on the implementation of the European SAR**

**G. Scavone; Luxembourg/SU**

**The industry perspective and work needed to comply with the Basic Safety Standards**

**D. Nielsen; Denmark/DE**

**Final discussion: Is the Basic Safety Standards Directive a step forward for patients, clinicians and professionals and regulations?**

**C. Fox; Paris/FR**

**The BSSD has always focussed on practical and technical solutions to minimize radiation exposure. This is not always possible, for example, in a scenario requiring the use of ionising radiation outside hospital settings. In this type of application, the ability to record all events or potential reasons for the occurrence of relevant events will be limited. The BSSD has always focussed on practical and technical solutions to minimize radiation exposure. This is not always possible, for example, in a scenario requiring the use of ionising radiation outside hospital settings. In this type of application, the ability to record all events or potential reasons for the occurrence of relevant events will be limited.**

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**Austria Center Vienna - 1st floor**

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