

and can often identify the anatomical cause of the PVT and corrective measures can be taken which might lead to long term improved results. However more studies with larger sample size are required to establish the safety and outcome of this approach. Our experience suggests that IR treatment is feasible and safe in early PVT in LDLT patients with good outcomes in cases where concomitant HAT is not present.

#### OC4.10

### Increasing Efficiency in the Interventional Radiology Division: Multiple Changes in Workflow from Patient Registration to Discharge

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**Background:** We aim to present our experience with measures resulting in increased workflow efficiency in our clinical practice, and to evaluate the effect of these changes on the time elapsed at each stage of the workflow process and how it impact overall workflow efficiency. **Method(s):** We implemented a set of changes at each stage of the workflow process from patient registration, pre-operative workup, procedure, post-operative care, and discharge. Average time for completion of each stage of the process was determined before and after implementing the changes. Weekly case volume (WCV), weekly mean overtime hours (WMOH) and monthly percentage of first case on time (FCOT%) were compared before and after the intervention. Patient profiles including age, sex, and BMI were tracked to account for confounding variables. Student's t-test was used to compare variables before and after intervention. F- test was used to compare variance before and after intervention. A p value of less than 0.05 was considered statistically significant. **Result(s):** No statistically significant difference was seen in the age, sex or BMI of patient population before and after intervention ( $p > 0.05$ ). There was a statistically significant 20% increase in WCV from 200 to 240, 45% decrease in WMOH from 10.8 hours to 4.9 hours and 25% increase in monthly FCOT% from 50% to 75% ( $p < 0.01$ ). **Conclusion(s):** Our workflow intervention resulted in better WCV, WMOH and FCOT%. Improved workflow efficiency is critical in the success of an interventional radiology department, and results in better patient care and overall patient satisfaction.

#### OC4.11

### Association of Concomitant Disease in the Profunda and Femoro-Popliteal Veins to Cumulative Patency and Re-Intervention Rates Following Ilio-Femoral Venous Stenting of Limbs with Postthrombotic Occlusion

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**Background:** Ilio-femoral stent patency is inferior in post-thrombotic disease compared with non-thrombotic venous obstruction. The aim of this study was to examine whether decreased inflow to the stent, caused by intraluminal obstructive disease, was associated with greater risk of re-intervention and inferior long-term patency outcomes. **Method(s):** Consecutive patients (2012-2017) receiving a nitinol venous stent for post-thrombotic disease were included for analysis. Pre-operative ultrasound was used to identify femoral vein (FV), profunda vein (PV), and/or popliteal vein (POPV) intraluminal scarring and/or residual thrombosis, and categorised into one of 3 groups: absence of disease; disease in a single inflow vessel; or disease in more than one inflow vessel. Stent patency was assessed using duplex ultrasonography post-intervention, and re-interventions performed when there was a reduction in stent diameter of  $>50\%$  or occlusion. **Result(s):** Of 164 patients treated, cumulative patency was 89% (median follow-up 2.4 yrs; range 46-308 wks). However, 70/164 (43%) patients required re-intervention to maintain patency (median number of re-interventions 2; range 1-6). The respective disease state of inflow vessels are shown in Table 1. Cumulative patency and re-intervention rates were significantly worse in patients with more than one diseased inflow vessel ( $P=0.47$ ,  $P=0.004$ , respectively). Disease in the FV+PV+POPV was associated with a higher risk of re-intervention (16/25 (64%); HR 2.76;  $P=0.009$ , 95% CI [1.29, 5.92]), and was a strong predictor of cumulative patency loss compared with patients that had no inflow vessel disease (18/25 (72%) HR 17.26;  $P=0.009$ , 95% CI [2.02, 147.07]). **Conclusion(s):** Maintaining stent patency in post-thrombotic limbs is influenced by the quality of inflow vessels. Patients with intraluminal scarring and/or residual thrombosis in the FV+PV+POPV should be counselled on their increased risk of patency loss.

#### P101

### Relative Atherosclerotic Sparing of the External Iliac Artery: Possibility of a Less Vasculopathic Arterial Graft Target

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**Background:** Calcified plaque build-up can increase the risk of subsequent vascular complications in pelvic solid organ transplantation and vascular bypass procedures. The purpose of this study was to assess the degree of atherosclerotic calcification in pelvic vessels. **Method(s):** We retrospectively reviewed the unenhanced computed tomography scans of 197 patients from August 2016 to March 2018. Using calcium-scoring software, we examined the distribution map of calcified plaques, focusing on four different arterial segments—the abdominal aorta, the common iliac artery (CIA), the EIA, and the common femoral artery (CFA)—to determine which one showed the least mural calcification. **Result(s):** A total of 197 patients (118 men, 79 women) with a mean age of  $61.19 \pm 10.8$  years were included in our study. The right EIA segment had the lowest average

calcification score ( $18.2 \pm 92.1$ ), including 180 cases (91.4%) of zero calcification, followed by 178 cases (90.4%) of zero calcification in the left EIA. When adjustments were made for age, gender, smoking status, diabetes, hypertension and hyperlipidemia, the Odds ratio (OR) of the left EIA for reaching a higher calcium score level was 1.19 ( $P=0.44$ , not significant) times greater than the reference group (right EIA). The ratio was markedly higher in the abdominal aorta segment ( $OR=146.74$ ,  $P<0.001$ ), followed by the right CIA ( $OR=42.5$ ,  $P<0.001$ ), the left CIA ( $OR=27.3$ ,  $P<0.001$ ), the right CFA ( $OR=3.96$ ,  $P<0.001$ ), and the left CFA ( $OR=3.51$ ,  $P<0.001$ ). **Conclusion(s):** The study demonstrates a significantly less calcific plaque burden in EIA compared to the adjacent arterial bed.

## P102

### Hail Medical Students' Knowledge About Imaging Modalities, Risks and Protection in Radiology

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**Background:** Safety in radiology become a very important patient and occupational safety issue with this constant increase in the use of diagnostic radiology in modern evidence-based medicine. The objective of this study was evaluation of the knowledge of Hail University medical students about safety measures in radiology to ensure they have the essential knowledge to protect themselves and their patients. **Method(s):** In this cross-sectional study, an anonymous electronic questionnaire was sent to 174 randomly selected students. The questionnaire contained 38 questions. The respondents' answers to these questions were used to classify them according to their demographic characteristics, and evaluate their knowledge about common imaging modalities, radiation risks, and safety measures. The data were analyzed using SPSS version 22 software. **Result(s):** Seventy-five (51.7%) of 145 respondents were female and 70 (48.3%) were male. Fifty-five respondents (37.9%) were in year 4, 38 (26.2%) were in year 5, and 52 (35.9%) were in year 6. The mean score for knowledge about common imaging modalities was  $4.10 \pm 2.030$  out of 10, that for knowledge about the risks of radiation was  $3.17 \pm 1.954$  (range 0–8) out of 13, and that for knowledge about radiation protection measures was low at  $0.79 \pm 0.922$  (range 0–4) out of 8. Overall, there was improvement in knowledge about imaging modalities and the risks of radiation as the number of clinical years increased ( $P<0.01$ ), but it was still unsatisfactory. **Conclusion(s):** The study showed there is very limited knowledge about radiation risks and safety measures among clinical years medical students which highlights the need for an urgent action taken by medical schools to improve their students' knowledge about these topics.

## P103

### Awareness of Interventional Radiology Among Clinical-Years Medical Students and Medical Interns at University of Hail

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**Background:** One of the most important challenges facing the evolution of modern interventional radiology is the lack of awareness among medical students about it. Objectives: This study aimed to determine the knowledge, perception, and views of University of Hail clinical-year medical students and medical interns regarding various topics of interventional radiology. **Method(s):** In this cross-sectional study, validated anonymous electronic questionnaire was sent to all clinical years students and medical interns. All the participants were informed about the study aim and objectives and an informed consent was obtained. **Result(s):** Two hundred responses were received. The majority of participants (45%) were agreed that their knowledge and information in interventional radiology is poor. The minority (17%) of the participants are interested to consider a career in diagnostic radiology or in interventional radiology. On the other hand, the most common reported reason of not considering radiology as a career was the inadequate and enough knowledge about it (27.5%). The majority of participants (72.5%) have not exposed to interventional radiology. Only (36.5%) of participants are interested in doing a 2-week interventional radiology elective during their internship year. **Conclusion(s):** This study demonstrate that the majority of the under-graduates and interns are lacking for basic knowledge of interventional radiology. About one-third of respondents are interested in doing their elective in interventional radiology, on the other hand, more than the half of participants are not interested or not sure yet.

## P201

### Non-Target Lung Embolization During Portal Vein Embolization Due to Unrecognized Intrahepatic Porto-Systemic Venous Fistula

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**Background:** To review literature of this rare complication and rare vascular malformation. To reinforce the value of pre-procedural conventional portogram for vascular abnormality even if contrast enhanced CT or MRI were normal. Preoperative