
Department of Diagnostic Radiology

The activities of the Department of Diagnostic Radiology of the CU MED HK and University Hospital in Hradec Králové include morphological diagnostics and minimally invasive treatment of a wide range of diseases in adult and paediatric patients using a wide range of imaging methods. In the diagnostic part, we use most often sciagraphic and skiascopic examinations, ultrasonography and computed tomography (CT) examinations, magnetic resonance imaging (MRI), digital subtraction angiography (DSA) examinations and mammographic breast examinations. Minimally invasive interventional radiology treatment includes the full spectrum of vascular and non-vascular procedures. Vascular interventional procedures represent a comprehensive treatment of diseases of the arterial, venous or lymphatic system of the whole body, with the exception of procedures on the heart and coronary arteries. Non-vascular procedures include biopsy organ sampling, drainage of fluid collections, ablative treatment of tumours, biliary procedures, musculoskeletal procedures or pain management. Doctors of the Department of Diagnostic Radiology actively participate in interdisciplinary rounds, seminars and indication rounds. They are involved in undergraduate and postgraduate teaching, not only of physicians but also of radiology assistants. It is also an integral part of the interdisciplinary centres. The radiology clinic holds regular educational events, certificate courses, tribal examinations, attestations and more.

Main research topics

Department of Diagnostic Radiology

- Imaging diagnosis and endovascular treatment of ischemic stroke (futile recanalization, acute stent recanalization in intracranial atherosclerosis).
- Endovascular treatment of cerebral aneurysms (flowdiverter remodelling, reconstructive treatment with stent and coils, use of glycoprotein IIb/IIIa receptor blockers in the treatment of acute thrombotic complications).
- Endovascular treatment of dural arteriovenous fistulas.
- Combination of endovascular and surgical treatment of pial arteriovenous malformations.
- Stent graft placement in the treatment of thoracic and abdominal aortic disease.
- Endovascular treatment of mesenteric ischemia.
- Endovascular treatment of bleeding.
- Endovascular treatment of iliofemoral venous thrombosis and pulmonary embolism.
- Minimally invasive treatment of chylothorax and chylascos.
- Ablative techniques in the treatment of cancer.
- Minimally invasive treatment of spinal pain.
- Treatment of pain in cancer patients.
- Radiation monitoring during interventions.
- Radiation monitoring in patients with CT scan of the lungs and abdomen.
- Non-vascular biopsy interventions.

Department of Nuclear Medicine

- Radionuclide diagnostics of malignant tumours using positron and photon radiopharmaceuticals.
- Radionuclide therapy of thyroid and prostate carcinomas.

Scientific research groups

Department of Diagnostic Radiology

- Group for ischemic stroke – cooperation with the Department of Neurology of CU MED HK and FN HK
- Group for the treatment of portal hypertension with transjugular intrahepatic portosystemic shunt – cooperation with the 2nd Department of Internal Medicine – Gastroenterology of CU MED HK and FN HK
- Group for the treatment of thoracic and abdominal aortic diseases – cooperation with the Department of Cardiosurgery and the Department of Surgery of CU MED HK and FN HK
- Group for the treatment of iliofemoral venous thrombosis and pulmonary embolism – cooperation with the 1st Department of Internal Medicine – Cardioangiology of CU MED HK and FN HK
- Group for diagnosis and treatment of lung cancer – cooperation with the Department of Pneumology and Department of Cardiosurgery of CU MED HK and FN HK
- Group for the treatment of renal and prostate cancer – cooperation with the Department of Urology and Department of Oncology and Radiotherapy of CU MED HK and FN HK

- Group for the treatment of back pain – cooperation with the Department of Anesthesiology, Resuscitation and Intensive Medicine, Department of Neurosurgery and Department of Neurology of CU MED HK and FN HK
- Collaboration with the Institute of Medicine – CT virtopsy
- Cooperation with Myeloma Group – IV. internal hemato-oncology clinic
- The department participates in a number of international clinical trials.

Department of Nuclear Medicine

The department participates in a number of clinical trials of new drugs both at home and abroad.

Equipment

Department of Diagnostic Radiology

The Department has a total of nine stationary and twelve mobile scanning machines, two skiascopy machines, eleven ultrasound machines, three CT and three MR machines, two angiography sets and two mammography machines. It is also equipped with microwave and radiofrequency ablation equipment. For pain management, it is equipped with a pulsed radiofrequency and oxygen-ozone generator.

Department of Nuclear Medicine

- Hybrid PET/CT: radionuclide oncology diagnostics
- Hybrid SPECT/CT: radionuclide oncology diagnostics