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## Volume 9 - Issue 4, 2009 - Country Focus – Radiology in Croatia

### Medical Imaging in Croatia: Interventional Radiology

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**Asst. Prof. Vinko Vidjak was the first attendee of a two-year interventional radiology subspecialty programme and undertook further training with a special focus on vascular interventional radiology. He is assistant professor in undergraduate and graduate studies of radiology in the University of Zagreb School of Medicine, chairperson of the Section for Interventional Radiology of the Croatian Society of Radiology (CSR), acting head of the Clinical Institute for IR and the head's assistant for quality. He is also a member of the board of the CSR.**

The Clinical Institute for Diagnostics and Interventional Radiology at the University of Zagreb School of Medicine has two imaging rooms, two diagnostic rooms for digestive tract exam, performing diascopic procedures and ERCP, two CT scanners (one single-slice, one 64-slice), MR (1.5T), an angiography room with a machine for DSA, one digital mammography machine, and several machines for other diagnostic imaging exams. We number nine radiology specialists, four radiology residents and two undergoing an education programme on behalf of another institution. The average annual increase of our activity is approximately 7 - 8%, or around 1,400 procedures (2008). We provide IR services for other less-equipped institutions, which annually adds around 50 additional procedures.

#### Are Residents Interested in Joining IR?

Education of interventional radiologists in Croatia starts with a radiology residency training programme lasting four years. Afterwards, a subspecialty in interventional radiology is available within a fellowship programme, lasting two years and divided into three parts: clinical work (five months); vascular interventional radiology (nine months) and, nonvascular interventional radiology (eight months).

In Croatia, there is a negative ratio of interest in IR compared with for noninvasive diagnostics (e.g. CT, MR). Here, a growing interest in noninvasive radiology resulted in stagnating numbers of IR residents. The main cause is the transition of the economy and the standard of living in Croatia in the past 15 years, as well as the growing number of private radiological centres that offer diagnostic but not therapeutic services. IR services are provided in a few clinical centres and there are no significant trends for IR specialists to migrate abroad.

IR training in Croatia does not use simulators. During the training period every procedure and assessment done by the resident is controlled and appraised by a mentor. Work with residents includes frequent assessments of their knowledge and manual abilities, which has a direct influence on the individual training dynamics and reaching the level of competence necessary for independent work. This is why the total number of procedures during the two-year training period is different for each participant.

## State Healthcare & its Impact on IR

Despite economic and social transformations, the central state healthcare system and central health insurance institution (HZZO) have been preserved. Private initiatives and health insurance provides certain advantages, which the inert central system does not allow (waiting lists for diagnostic tests, availability of more expensive tests, etc.).

However, the majority of private institutions provide only diagnostic services and at present, none of them have formed a team of interventional radiologists. Within the state healthcare system a significant number of IR services/procedures are not on the list of services financed by the system, and in addition the cost benefit of some of the costlier IR procedures from the list is low (e.g. TIPS, EVAR), taking into consideration the value of material used and labour costs of the medical team. This has a negative financial effect on the institution providing the IR service. Another important fact is that the team's cost of labour is undervalued regarding the costs of material used to perform a procedure. Such inertia of the system, and a lack of understanding of its true potential, is the cause of poor integration of IR in the state healthcare system.

Published on : Fri, 4 Sep 2009