

Fellowship Training in Interventional Radiology in the Middle and Near East

It is heartening to read about the initiatives for interventional radiology (IR) training in recent issues of the AJIR.^[1-3] The establishment of specific training in IR in the Middle and Near East is a necessity to ensure the development of the specialty and that the patients benefit from many aspects of minimally invasive procedures that are offered by image-guided therapy.

The Pan Arab Interventional Radiology Society (PAIRS) has been advocating the establishment of such programs for many years. A model curriculum was approved by the society in 2018. This curriculum draws on local and international experience and forms a basis for sufficient IR training and could be added to, or modified, based on local needs and availability of expertise and facilities.

To bring in a measure of standardization and ensure comprehensive training, it is important to consider fellowship training in IR under the following headings.

Scope of Training

The trainee would have had some exposure to basic IR during residency training; however, in view of the considerable variation in the availability of experts and training sites in our region, it should not be assumed that basic skills are acquired before entering into a fellowship program. The training should, therefore, start from basic skills and common procedures such as biopsies and simple drainages and gradually expand to cover more complex procedures in all body systems. Such training will be expected to cover vascular and nonvascular intervention. It is acknowledged by most interventionalists that training in neurointervention is a separate pathway that should be addressed differently; hence, for the purpose of this editorial, neurointervention will not be discussed. However, with the recent data on the value of early intervention, training in stroke management and thrombus extraction should be included whenever possible. Simulators are now available in many countries and advanced institutions. Simulator training should be encouraged whenever possible. Dedicated workshops could be set up in centers where simulators are available and made available to other centers of training across the region.

Duration

To train a fellow adequately in all aspects of intervention requires a minimum of 2 years, considering the wide variety of procedures and the development of new methods of treatment. A specific short fellowship program may be considered or set up for physicians who have had a good exposure to IR and are interested in developing specific skills at centers of excellence.

Curriculum Assessment

The published articles in AJIR about the IR fellowships illustrate the dependence on curricula developed by international societies such as SIR and CIRSE.^[4,5] While these curricula are of tremendous value in establishing new programs, they should be modified according to local and regional needs. For instance, it may be that radioembolization and oncological intervention are more relevant than vascular access management in some institutions/countries.

Clinical Training

The importance of clinical training cannot be overemphasized.^[6] Not only is it important from the perspective of providing the best care for the patient, but it also is a prerequisite for the IR to be able to establish his/her own practice and direct referral as well as follow-up on patients and provide continuity of care. Ideally, a period of 3–6 months of clinical training should be incorporated into the curriculum and should include exposure to inpatient and outpatient care in vascular and nonvascular domains.

Trainers/Trainee Numbers and Ratio

This is not easy to determine. The individual training centers will need some flexibility in this issue, but it is advisable that the ratio of trainer to trainees does not exceed 1:3.

Logbook

An electronic format is ideal. The logbook provides a record of training and helps assess competence. It goes without saying that the logbook should be authenticated by the radiologists responsible for training at each institution.

Exit Examination

An examination based on case discussion is probably the best format. This could be carried out as an oral examination with in-depth discussion to probe the trainee's knowledge in different aspects of IR. However, end of year 1 evaluation by the program director is also important and provides useful information about the progress of the fellow and an opportunity for counseling should that be necessary.

Deficiencies

A byproduct of the pattern of healthcare in the region is the variation in the availability of resources and volume of procedures. Therefore, deficiencies in training are likely to

be present in some countries. It is hoped that collaboration among training centers across the region will be possible and that identified deficiencies are addressed this way. Societies such as PAIRS can play an important role in establishing contacts and training pathways.

Electives during Residency and Training Periods

Electives during residency training can help direct residents toward a future in IR and fellowship training in the specialty. On the other hand, electives during fellowship training can help focus the trainee on certain aspects of IR and provide an opportunity to benefit from specific expertise or learn a new procedure. Ideally, a period of 4 weeks should be incorporated into any curriculum for this purpose.

Neurointervention

As mentioned earlier, this is a separate pathway. However, the results of recent clinical trials on stroke management have illustrated the value of thrombus extraction in the setting of acute stroke. Several training programs in the Western world now incorporate cerebral artery thrombus extraction into general IR fellowship training. The skills acquired by any fellow in an accredited IR training program should form a good basis for extension of the training, to include acute thrombus extraction under the guidance of colleagues who perform full neurointervention in an effort to provide a more rapid and comprehensive service to reduce the burden of stroke.

Musculoskeletal Intervention

Although many programs in Europe and North America separate musculoskeletal (MSK) intervention to a component within MSK fellowships, the current practice in our region requires incorporation of MSK intervention into the training of IR fellows.

New Frontiers

The development of new procedures is one of the main attractions of IR. It follows that curricula need to be updated regularly and training opportunities should be created for trainees (as well as trainers) to be exposed to new developments and to acquire appropriate skills. Besides scientific meetings, attendance of workshops and short training courses should be encouraged.

Alternative Pathways (USA)

The new training regulations in North America now provide opportunities for radiology residents to enter a specific IR pathway. This is easy to apply in a country in which uniform training schemes and training opportunities exist. The current practice and training patterns in the region do not fit well into this scheme, and fellowship training remains a better approach for the time being to be reassessed in the future.

Academic Involvement and Output

Every fellow should be encouraged to participate in academic activities, to present at scientific meetings, and to publish in the interventional literature. It is probably appropriate that such activities should be a condition for graduation from fellowship training.

Other Specialties; Competition versus Collaboration

The role of other specialties in image-guided intervention continues to expand from cardiologists to vascular surgeons to neurologists to many other medical specialties. Depending on local practice patterns, it is advisable that collaboration with other teams is incorporated into fellowship training to ensure as comprehensive training as possible. Cross-fertilization with other specialties has its advantages and teaching dimension.

Accreditation

Accreditation of any training scheme ensures adherence to standards of training and patient care. Supervision of training is available for authorities involved in higher education in some countries (Saudi Arabia and Egypt). However, there are currently no accrediting bodies for IR training on a regional level. IR societies will no doubt be moving in this direction.

Certification

Country-specific certification of training is available currently (by the Ministry of Health in Egypt for instance). However, a more meaningful certification probably is that given by specific bodies that are involved in IR and radiological training. The Arab Board of Radiology and Medical Imaging has been supervising training in radiology in the Arab world and has recently approved a curriculum for subspecialty training in IR. The approved curriculum is based on the one proposed by the PAIRS with some modifications. The certifying bodies should be involved in the examination process of the training fellows.

Independent Specialty

IR is now an independent specialty in North America, in the UK, and in many countries in Europe. The drive to establish IR as an independent specialty throughout the Middle and Near East must persist until the goal is achieved. It is only then that the interventional radiologists can achieve their full role in the patient care.

Advertising and Publicizing

Any fellowship program will not flourish without the appropriate publicity to ensure the adequate input of good residents. It is incumbent on the training centers to make every effort to inform the community of the existence of the fellowship. The local scientific societies could play a

vital role in this endeavor. Societies such as PAIRS provide good platforms to publicize local efforts.

Name of Specialty

Finally, a comment about the name of the specialty. IR remains a historical term that has been used for the past 40 or so years to describe our specialty. It is surprising, however, how little the public know about it and how medical practitioners are unaware of the role of IR. Many suggestions for a different name have been put forward. Image-guided therapy is probably a good term. Other suggestions such as radiological surgeons have also been proposed or used. All of these terms deserve some consideration, but I personally think that alluding to image-guided intervention provides clarification of the role of IRs.

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| Quick Response Code:  | Website: www.arabjir.com |
| | DOI: 10.4103/AJIR.AJIR_10_20 |

How to cite this article: Al-Kutoubi A. Fellowship training in interventional radiology in the Middle and Near East. Arab J Intervent Radiol 2020;4:57-9.

Received: 13-04-2020, **Accepted:** 13-04-2020,
Online Published: 07-07-2020