

# The Arab Journal of Interventional Radiology

## Editor-in-Chief

---

### Mohammad Arabi

Department of Medical Imaging,  
King Abdulaziz Medical City,  
Riyadh, Saudi Arabia,

## Deputy Editor

---

### Saher Sabri

Department of Interventional  
Radiology,  
Department of Radiology  
MedStar Georgetown University  
Hospital,  
Washington DC, USA

## Arterial interventions Section Editors

---

### Saher Sabri

Department of Interventional  
Radiology,  
Department of Radiology  
MedStar Georgetown University  
Hospital,  
Washington DC, USA

### Mohamad Hamady

Department of Interventional  
Radiology & Image Guided Surgery,  
Department of Surgery and Cancer,  
Imperial College-London,  
St Mary's Campus,  
London, UK

### Hicham Kobeiter

Department of Radiology and  
Interventional Radiology,  
Department of Radiology, Medical  
Imaging and Neuroradiology,  
Henri Mondor University Hospital,  
University of Paris-Est Créteil (UPEC),  
Paris, France

### Refaat Salman

Facharzt of Radiology, EBIR, MHBA,  
Consultant, Vascular and  
Interventional Radiology,  
King Abdulaziz Medical City and King  
Abdullah Specialized Children Hospital,  
Ministry of National Guard,  
Riyadh, Saudi Arabia

## Venous Interventions Section Editors

---

### Abbas Chamsuddin

Clinical Professor,  
American University of Beirut,  
Beirut, Lebanon

### Salah D. Qanadli

Department of Cardio-Thoracic and  
Vascular Imaging Unit,  
Department of Radiology,  
University of Lausanne- CH,  
Lausanne, Switzerland

### Ahmad I. Alomari

Department of Interventional  
Radiology & Vascular Anomalies,  
Boston Children's Hospital,  
Harvard Medical School,  
Boston, Massachusetts, USA

### Fakhir Elamsri

Radiology and Imaging Specialists of  
Lakeland,  
Lakeland Regional Medical Center,  
Lakeland, Florida, USA

### Osman Ahmed

Department of Vascular and  
Interventional Radiology,  
University of Chicago, Illinois, USA

## Interventional Oncology Section Editors

---

### Azzam Khankan

Department of Medical Imaging,  
King Abdulaziz Medical City,  
Riyadh, Saudi Arabia

### Hicham Abada

Department of Interventional  
Radiology,  
Cleveland Clinic,  
Abu Dhabi, UAE

### Almamooun I. Justaniah

Department of Interventional  
Radiology,  
Saudi Interventional Radiology Society,  
King Faisal Specialist Hospital &  
Research Center,  
Jeddah, Saudi Arabia

### Dierk Vorwerk

Department of Radiology,  
Klinikum Ingolstadt, Germanyadt,  
Germany

### Karim A. Abd El Tawab

Department of Interventional  
Radiology,  
Ain Shams University Hospitals,  
Cairo, Egypt

### Rana T. M. Khafagy

Department of Diagnostic and  
Interventional Radiology,  
Ain Shams University Hospitals,  
Cairo, Egypt

### Ahmed Gabr

Department of Radiology and Medical  
Imaging,  
University of Virginia Medical Center,  
Virginia, USA

## Neuro interventions Section Editors

---

### Aghiad Al-Kutoubi

Department of Radiology & Head,  
IR Division,  
Department of Diagnostic Radiology,  
The American University of Beirut  
Medical Center,  
Beirut, Lebanon

### Michel Mawad

Department of Radiology,  
Baylor College of Medicine,  
Houston, Texas, USA.  
Neurological Institute and Neurology,  
Cleveland Clinic Abu Dhabi,  
Abu Dhabi, United Arab Emirates

### Farid Aladham

Department of Vascular and Neuro  
Interventional Radiology,  
Amman, Jordan

### Mohamed Aggour

Department of Interventional  
Neuroradiology,  
Barts Health NHS Trust,  
London, UK

### **Imaging/Non-Vascular interventions**

#### **Tarek Eldiasty**

Computer Vision and Image Processing  
Laboratory,  
University of Louisville,  
Louisville, KY, USA

#### **Khaled M. Elsayes**

Division of Diagnostic Imaging,  
The University of Texas MD Anderson  
Cancer Center,  
Houston, TX, USA

### **Medical Informatics Editor**

#### **Ahmed Gabr**

Department of Radiology and Medical  
Imaging,  
University of Virginia Medical Center,  
Virginia, USA

© 2021, National Academy of Medical Sciences (India). All rights, including the rights of publication, distribution, and sales, as well as the right to translation, are reserved. No part of this work covered by the copyrights hereon may be reproduced or copied in any form or by any means – graphic, electronic, or mechanical, including photocopying, recording, taping, or information and retrieval systems - without written permission of the publisher.

*Annals of the National Academy of Medical Sciences (India)* is published 4 times a year in January, April, July, and October by Thieme Medical and Scientific Publishers Private Limited, A – 12, Second Floor, Sector - 2, Noida - 201301, Uttar Pradesh, India. Tel: +91-120-4556600, Fax: +91-120-455-6649.

**Subscription:** Open access journals available online for free at <http://open.thieme.com>.

**Advertisers contact:** Marketing, Thieme Publishers Delhi, A-12, Second Floor, Sector -2, Noida-201301, Uttar Pradesh, [marketing@thieme.in](mailto:marketing@thieme.in).

*Annals of the National Academy of Medical Sciences (India)* is indexed in DOAJ. Thieme Medical Publishers is a member of the CrossRef initiative.

Editorial comments should be sent to [journals@thieme.com](mailto:journals@thieme.com). The content of this journal is available online at [www.thieme-connect.com/Products](http://www.thieme-connect.com/Products). Visit our Web site at [www.thieme.com](http://www.thieme.com) and the direct link to this journal at [www.thieme.com/anams](http://www.thieme.com/anams).

**Typesetting:** DiTech Process Solutions Pvt. Ltd. Mumbai, India

**Printing and Binding:** Avantika Printers Pvt. Ltd.

**Printed in India**