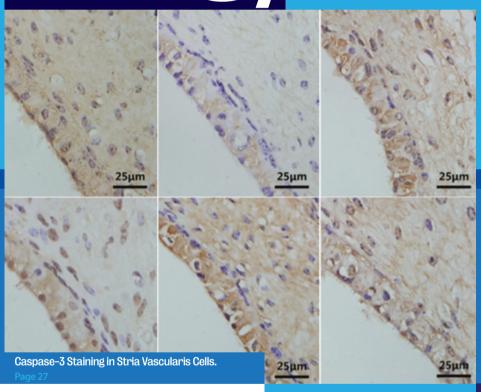
The Journal of International Advanced Otology



Vol. 10 | Issue 1 | January 2014





Member of

Supported by

Covered by

SCI EXPANDED

Beginning with Vol 3 Issue 1





Official Journal of The Mediterranean Society of Otology and Audiology

www.advancedotology.org



IAO



EDITOR

O. Nuri Özgirgin

Department of Otolaryngology-Head and Neck Surgery, Bayındır Hospital, Ankara, Turkey

ASSOCIATE EDITOR

Bülent Satar

Department of Otolaryngology, Gülhane Military Medical Academy, Ankara, Turkey

ADMINISTRATIVE ADVISORY BOARD

Abdelhamid Benghalem

Department of Otolaryngology, Cabinet,

Casablanca, Marocco

Antonio della Volpe

Department of Otolaryngology, Santobono

Paediatric Hospital, Naples, Italy

Antonio Quaranta

Department of Otolaryngology, University of Bari,

Bari, Italy

Armağan İncesulu

Department of Otolaryngology, Eskişehir Osmangazi University, Eskişehir, Turkey

Ashley Wackym

Department of Otolaryngology, Ear and Skull Base

Institute, Portland, USA

Bruce Gantz

Department of Otolaryngology, University of Iowa,

Iowa, USA

Constantino Morera

Department of Otolaryngology, University of

Valencia, Valencia, Spain

Erol Belgin

Department of Otolaryngology, Başkent University,

Ankara, Turkey

Erwin Offeciers

Department of Otolaryngology, Sint-Augustinus

Hospital University, Wilrijk, Belgium

George Zaytoun

Department of Otolaryngology, American

University, Beirut, Lebanon

Haruo Takahashi

Department of Otolaryngology, University of

Nagasaki, Nagasaki, Japan

Hiroshi Moriyama

Department of Otolaryngology, Jikei University

School of Medicine, Tokyo, Japan

İrfan Devranoğlu

Department of Otolaryngology, İstanbul University,

İstanbul, Turkey

Jacques Magnan

Department of Otolaryngology, Causse Ear Clinic,

Beziers, France

Karl B. Huttenbring

Department of Otolaryngology, University of Köln,

Köln, Germany

Lorne Parnes

Department of Otolaryngology, University of

Western Ontario, Ontario, Canada

Anestis Psifidis

Department of Otolaryngology, University of

Thessaloniki, Greece

Malou Hultcrantz

Department of Otolaryngology, Karolinska University Hospital, Stockholm, Sweden

Milan Stankovic

Department of Otolaryngology, University of Nis,

Nis, Serbia

Mislav Gjuric

Department of Otolaryngology, Sinteza Health

Center, Zagreb, Croatia

Orhan Yılmaz

Department of Otolaryngology, Dışkapı Yıldırım

Beyazıt Training and Research Hospital, Ankara,

Turkey

Per Caye Thomasen

Department of Otolaryngology, Gentofte University

Hospital, Hellerup, Denmark

Robert Filipo

Department of Otolaryngology, Sapienza University,

Rome, Italy

Tayfun Kirazlı

Department of Otolaryngology, Ege University,

İzmir, Turkey

Wolf Dieters Baumgartner

Department of Otolaryngology, University Clinic

Vienna, Vienna, Austria

Yıldırım Bayazıt

Department of Otolaryngology, Medipol University,

İstanbul, Turkey



Publisher İbrahim KARA

Publication Director Ali ŞAHİN

Deputy Publication Directors Gökhan ÇİMEN Ayşegül BOYALI

Publication Coordinators Nilüfer TÜRKYII MAZ Merve AKDEMİR SAĞLIK Leda BASGÜL

Sales Coordinator Sinan Gökbörü BÜNCÜ

Finance and Administration

Veysel KARA **Project Assistant** Gizem KOZ

Graphics Department Ünal ÖZER Neslihan YAMAN Merve KURT

Contact

: Büyükdere Cad. No: 105/9

34394 Mecidiyeköy,

Şişli, İstanbul : +90 212 217 17 00 Phone +90 212 217 22 92 Fax E-mail : info@avesyayincilik.com

Yayın Türü: Yerel Süreli Basım Tarihi: Mart 2014 Basım Yeri: ADA Ofset Matbaacılık Tic. Ltd. Şti., Litros Yolu 2. Matbaacılar S. EBlok No: (ZE2) 1. Kat Topkapı, İstanbul Telefon: +90 212 567 12 42

The Journal of International Advanced Otology

EDITORIAL CONSULTANTS

Gino Marioni

Department of Otolaryngology, University of Padova, ITALY

John Xenelis

Department of Otolaryngology, University of Athens, Athens, Greece

George Zavtoun

Department of Otolaryngology, American University, Beirut, Lebanon

Hans Peter Zenner

Department of Otolaryngology, University of Tubingen, Tubingen, Germany

Steven O'Leary

Department of Otolaryngology, University of Melbourne, Melbourne, Australia

Bruce Gantz

Department of Otolaryngology, University of Iowa, Iowa, USA

Badr el Mostafa

Department of Otolaryngology, Ain-Shams University, Cairo, Egypt

Department of Otolaryngology, Ospedale Papa Giovanni XXIII - Bergamo, Bergamo, Italy

Rubens de Brito Neto

Department of Otolaryngology, University of Sao Paulo, Sao Paulo, Brazil

Abdelhamid Benghalem

Department of Otolaryngology, Cabinet University of Iowa, Casablanca, Marocco

Babür Akkuzu

Department of Otolaryngology, American Hospital, İstanbul, Turkey

Songül Aksoy

Department of Audiology, Hacettepe University Ankara, Turkey

Mesut Akyol

Department of Statistic, Gulhane Military Academy, Ankara, Turkey

Cüneyt Alper

Department of Otolaryngology, University of Pittsburg, Pennsylvania, U.S.A.

Helge Rask Andersen

Department of Otolaryngology, Uppsala University Hospital, Uppsala, Sweden

Francisco Antoli-Candela

Department of Otolaryngology, Clinica Antoli Candela, Madrid, Spain

Fazıl Necdet Ardic

Department of Otolaryngology, Pamukkale University, Denizli, Turkey

Miguel Aristegui

Department of Otolaryngology, Hospital General Universitario Gregorio Maranon, Madrid, Spain

Bernard Ars

Department of Otolaryngology, University of Antwerp, Abtwerp, Belgium

Asım Aslan

Department of Otolaryngology, Celal Bayar University, Manisa, Turkey

Ahmet Ataş

Department of Otolaryngology, İstanbul University, Istanbul, Turkey

Manohar Bance

Department of Otolaryngology, Dalhousie University, Halifax Nova Scotia, Canada

Maurizio Barbara

Department of Otolaryngology, Sapienza University, Sant'Andrea Hospital, Rome, Italy

Saba Battelino

Department of Otolaryngology, University Medical Centre, Ljubljana, Slovenia

Wolf-Dieters Baumgartner

Department of Otolaryngology, University Clinic Vienna, Viena, Austria

Yıldırım Bayazıt

Department of Otolaryngology, Medipol University, İstanbul, Turkey

Aziz Relal

Department of Otolaryngology, Alex Ear Center, Alexandria, Egypt

Erol Belgin

Department of Otolaryngology, Başkent University, Ankara, Turkey

Bruce Black

Department of Otolaryngology, Royal Children's Hospital, Brisbane, Australia

Robert Briggs

Department of Otolaryngology, Royal Victorian Eye and Ear Hospital, Melbourne, Australia

Rubens de Brito

Department of Otolaryngology, University of Sao Paulo, Sao Paulo, Brazil

Jan W. Casselman

Department of Otolaryngology, AZ St. Jan Brugge-Oostende AV, Brugge, Belgium

Carlos Cenjor Español

Department of Otolaryngology, Fundacion Jimenez Diaz - Clinica Nuestra Senora Concepcion, Madrid,

Sun O. Chang Department of Otolaryngology, Seoul National University Hospital, Seoul, South-Korea

Udi Cinamon

Department of Otolaryngology, Edith Wolfson Medical Center, Cholon, Israel

Onur Çelik

Department of Otolaryngology, Celal Bayar University, Manisa, Turkey

Vincent Darrouzet

Department of Otolaryngology, Hospital Pellegrin, Bordeaux, France

Pavel Dimov

Department of Otolaryngology, University of Stara Zagora, Stara Zagora, Bulgaria

Stefan Dazert

Department of Otolaryngology, Ruhr University of Bochum, Bochum, Germany

İrfan Devranoğlu

Department of Otolaryngology, İstanbul University, İstanbul, Turkey

Gerard O'Donoghue

Department of Otolaryngology, Queen's Medical Centre, University Hospital, Nottingham, UK

John Dornhoffer

Department of Otolaryngology, UAMS Medical Center, Little Rock, USA

Bruce M. Edwards

Department of Otolaryngology, Medical Center, Ann Arbor, Michigan, U.S.A.

Roberto Filipo

Department of Otolaryngology, Sapienza University, Rome, Italy

Alec Fitzgerald O'Connor

Department of Otolaryngology, St. Thomas' Hospital, London, UK

Arun K. Gadre

Department of Otolaryngology, University of Louisville, Kentucky, USA

Aydan Genc

Department of Audiology, Hacettepe University, Ankara, Turkey

Mislav Giuric

Department of Otolaryngology, SINTEZA Health Center, Zagreb, Croatia

Fnis Alpin Guneri

Department of Otolaryngology, Dokuz Eylül University, İzmir, Turkey

Wilko Grolman

Department of Otolaryngology, University of Utrecht, Utrecht, Netherlands

İbrahim Hizalan

Department of Otolaryngology, Novomet ENT Center, Bursa, Turkey

Karl-Bernd Hüttenbrink

Department of Otolaryngology, University of Köln, Köln, GERMANY

Yukiko lino

Department of Otolaryngology, Jichi Medical University Saitama Medical Center, Saitama, Japan

Armağan İncesulu

Department of Otolaryngology, Eskişehir Osmangazi University, Eskişehir, Turkey

Herman Jenkins

Department of Otolaryngology, University of Colorado, Denver, USA

Daniel Jiang

Department of Otolaryngology, St. Thomas' Hospital, London, UK

Mohan Kameswaran

Department of Otolaryngology, Madras ENT Research Foundation, Chennai, India

The Journal of International Advanced Otology

Daniel Kaplan

Department of Otolaryngology, Ben Gurion University, Beer Sheva, Israel

Paul Kilenv

Department of Otolaryngology, University of Michigan, Michigan, ÚSÁ

Chona-Sun Kim

Department of Otolaryngology, University of Seoul, Seoul, South-Korea

Tayfun Kirazlı

Department of Otolaryngology, Ege University, İzmir, Turkey

Mete Kıroğlu

Department of Otolaryngology, Çukurova University, Adana, Turkey

Özlem Konukseven

Department of Otolaryngology, Atatürk Hospital, Ankara, Turkey

Nazım Korkut

Department of Otolaryngology, İstanbul University, İstanbul, Turkey

Jona Kronenberg

Department of Otolaryngology, Zerifin Tel Aviv University, Tel-Hashomer, Israel

Mavis Kulak Kayikci

Department of Audiology, Hacettepe University, Ankara, Turkey

Roland Laszig

Department of Otolaryngology, University of Freiburg, Freiburg, Germany

Stephen O'Leary

Department of Otolaryngology, University of Melbourne, Melbourne, Australia

Thomas Linder

Department of Otolaryngology, University of Luzern, Luzern, Switzerland

Christopher Linstrom

Department of Otolaryngology, New York Eye and Ear Infirmary, New York, USA

Michal Luntz

Department of Otolaryngology, Bnai Zion Medical Center, Haifa, Israel

Jacques Magnan

Department of Otolaryngology, Causse Ear Clinic, Beziers, France

Manuel Manrique

Department of Otolaryngology, University of Pamplona, Pamplona, Spain

David Andrew Moffat

Department of Otolaryngology, University of Cambridge, Cambridgeshire, UK

Per Moller

Department of Otolaryngology, University of Bergen, Bergen, Norway

Michel Mondain

Department of Otolaryngology, Hospital St. Charles, Montpeiller, France

Constantino Morera

Department of Otolaryngology, University of Valencia, Valencia, Spain

Jef Mulder

Department of Otolaryngology, Radboud University Hospital, Nijmegen, Netherlands

Emmnauel Mylanus Department of Otolaryngology, University of Nijmegen, Nijmegen, Netherlands

Thomas Nikolopoulos

Department of Otolaryngology, University of Athens, Athens, Greece

Onur Odabaşı

Department of Otolaryngology, Adnan Menderes University, Aydın, Turkey

F. Erwin Offeciers

Department of Otolaryngology, Sint-Augustinus Hospital University, Wilrijk, Belgium

John S. Oghalai

Department of Otolaryngology, Stanford School of Medicine, Stanford, USA

Seung Ha Oh

Department of Otolaryngology, Seoul National University Hospital, Seoul, South-Korea

Levent Olgun

Department of Otolaryngology, İzmir Bozyaka Hospital, İzmir, Turkey

Carlos A. Oliveira

Department of Otolaryngology, University of Brasília Medical School, Brasilia, Brazil

Ewa Olszewska

Department of Otolaryngology, Medical University of Bialystok, Bialystok, Poland

Suat Özbilen

Department of Otolaryngology, Gazi University, Ankara, Turkey

Levent Naci Özlüoğlu

Department of Otolaryngology, Başkent University, Ankara, Turkey

Blake Papsin

Department of Otolaryngology, University of Toronto, Toronto, Canada

Keehyun Park

Department of Otolaryngology, Ajou University School of Medicine, Suwon, South-Korea

Lorne Parnes

Department of Otolaryngology, University of Western Ontario, Ontario, Canada

Ronen Perez

Department of Otolaryngology, Shaare Zedek Medical Center, Jerusalem, Israel

Fabio Piazza

Department of Otolaryngology, University of Parma, Parma, Italy

Stefan Plontke

Department of Otolaryngology, University Hospital Halle, Saale, Germany

Department of Otolaryngology, Children's Hospital Boston, Boston, USA

Livio Presutti

Department of Otolaryngology, Policlinico University of Modena, Modena, Italy

Marco Puterman

Department of Otolaryngology, Ben Gurion University, Beer Sheva, Israel

Antonio Quaranta

Department of Otolaryngology, University of Bari, Bari, Italy

Nicola Quaranta

Department of Otolaryngology, University of Bari, Bari, Italy

Angel Ramos

Department of Otolaryngology, University Hospital Insular, Las Palmas de Gran Canaria, Spain

Hans Ramsav

Department of Otolaryngology, Helsinki University Hospital, Helsinki, Finland

Shakeel Saeed

Department of Otolaryngology, University College London, London, United Kingdom

Ayşe Sanem Sahli

Department of Audiology, Hacettepe University Audiology Dept, Ankara, Turkey

Masafumi Sakagami

Department of Otolaryngology, Hyoto College of Medicine, Nishinomiya, Japan

Mario Sanna

Department of Otolaryngology, Gruppo Otologico, Piacenza, Italy

Bülent Serbetcioălu

Department of Otolaryngology, Dokuz Eylül University, İzmir, Turkey

Aristides Sismanis

Department of Otolaryngology, University of Athens, Athens, Greece

Henryk Skarzynski

Department of Otolaryngology, World Hearing Center, Warsaw, Poland

Thomas Somers

Department of Otolaryngology, Sint-Augustinus Hospital University, Wilrijk, Belgium

Sven Eric Stangerup

Department of Otolaryngology, Gentofte University Hospital, Copenhagen, Denmark

Milan Stankovic

Department of Otolaryngology, University of Nis, Nis, Serbia

Holger Sudhoff

Department of Otolaryngology, Bielefeld Academic Teaching Hospital, Muenster University, Bielefeld, Germany

Istvan Sziklai

Department of Otolaryngology, University of Debrecen, Debrecen, Hungary

Haruo Takahashi

Department of Otolaryngology, University of Nagasaki, Nagasaki, Japan

Sugata Takahashi

Department of Otolaryngology, University of Niigata, Niigata, Japan

The Journal of International Advanced Otology

Rinze A. Tange

Department of Otolaryngology, University of Utrecht, Utrecht, Netherlands

Per Caye Thomasen

Department of Otolaryngology, Gentofte University Hospital, HELLERUP, Denmark

Franco Trabalzini

Department of Otolaryngology, University of Siena, Siena, Italy

Eric Truy

Department of Otolaryngology, University of Lyon, Lyon, France

Tuncay Uluğ

Department of Otolaryngology, İstanbul University, İstanbul, Turkey

Cem Uzun

Department of Otolaryngology, Trakya University, Edirne, Turkey

Paul Van de Hevning

Department of Otolaryngology, University of Antwerp, Antwerp, Belgium

Antonio della Volpe

Department of Otolaryngology, Santobono Pediatric Hospital, Naples, Italy

Robert Vincent

Department of Otolaryngology, Causse Ear Clinic, Béziers-Colombiers. France

Ashley Wackym

Department of Otolaryngology, Ear and Skull Base Institute, Portland, USA

Stephen Wetmore

Department of Otolaryngology, University West Virginia Medical Center, Morgantown, U.S.A.

Ioannis Xenelis

Department of Otolaryngology, University of Athens, Athens, Greece

Sertac Yetiser

Department of Otolaryngology, Anadolu Hospital, Istanbul, Turkey

Orhan Yılmaz

Department of Otolaryngology, Dışkapı Hospital, Ankara, Turkey

Robin Youngs

Department of Otolaryngology, Gloucestershire Royal Hospital, Gloucestershire, UK

Matthew Yung

Department of Otolaryngology, Ipswich Hospital, Ipswich, UK

Thomas Zahnert

Department of Otolaryngology, University Hospital Dresden, Dresden, Germany

Diego Zanetti

Department of Otolaryngology, University of Brescia, Brescia, Italy

THE MEDITERRANEAN SOCIETY OF OTOLOGY AND AUDIOLOGY (MSOA) INTERNATIONAL EXECUTIVE COMMITTEE

President

Jacques Magnan,

Department of Otolaryngology, Causse Ear Clinic, Beziers, France

Former President

Anestis Psifidis

Department of Otolaryngology, University of Athens, Athens Greece

Vice President

Constantino Morera

Department of Otolaryngology, University of Valencia, Valencia, Spain

Secretary

Antonio della Volpe

Department of Otolaryngology, Santobono Paediatric Hospital, Naples, Italy

Treasure

Armağan İncesulu

Department of Otolaryngology, Eskişehir Osmangazi University, Eskişehir, İstanbul

Founder

Antonio Quaranta

Department of Otolaryngology, University of Bari, Bari, Italy

Members

Fatthi Abdel Baki

Department of Otolaryngology, Alexandria University, Alexandria, Egypt

Saba Battelino

Department of Otolaryngology, University Medical Centre, Ljubljana, Slovenia

Abdelhamid Benghalem

Department of Otolaryngology, Cabinet University of Iowa, Casablanca, Marocco

Hajri Hella

Department of Otolaryngology, El manar University, Tunis, Tunisia

Ronen Perez

Department of Otolaryngology, Shaare Zedek Medical Center, Jerusalem, Israel

O. Nuri Ozgirgin (Turkey) (Editorial Position) Department of Otolaryngology-Head and Neck Surgery, Bayındır Hospital, Ankara, Turkey

LOCAL OFFICERS (TURKEY)

O. Nuri Özgirgin, Erol Belgin, Tuyfun Kirazlı, Orhan Yılmaz, Yıldırım Bayazit, İrfan Devranoğlu, Armağan İncesulu

Owned and published by

The Mediterranean Society of Otology and Audiology (MSOA) Hayat Sokak 4/8 Kızılay, Ankara – Turkey

Fax: +90 312 235 41 00 URL: www.mediotol.org e-mail: info@mediotol.org



Official Journal of The Mediterranean Society of Otology and Audiology

Holder and accountability for content on behalf of MSOA

Prof. Dr. O. Nuri Özgirgin

Bayındır Hastanesi, Söğütözü, Ankara, Turkey Tel: +90 312 287 90 00 – int: 7811 Fax: +90 312 284 42 76

e-mail: ozgirgin@politzersociety.org



Address for correspondence

Mailing address: IAO, POB 108, 06502, Bahçelievler, Ankara, Turkev

URL: www.advancedotology.org E-mail: jiao@advancedotology.org Fax: +90 312 235 41 00

Subscription

Membership of MSOA includes a subscription to the Journal. The Journal is not sold seperately.

The paper is acid free and meets the requirements for permanence set by the ISO 9706

The Journal of International Advanced Otology (IAO)

Issues three times a year Copyright © 2005-2014. All rights reserved. ISSN 1308-7649 EISSN 2148-3817



Aims and Scope

The Journal of International Advanced Otology (IAO – Citation Abbreviation: Int Adv Otol) is the double-blind peer-reviewed, international publication organ of the The Mediterranean Society of Otology and Audiology. The journal is also supported by the Politzer Society. The Journal of International Advanced Otology is published 3 times per year on January, October and May and its publication language is English.

The scope of the Journal is limited with otology, neurotology, audiology (excluding linguistics) and skull base medicine.

The Journal of International Advanced Otology aims to publish manuscripts at the highest clinical and scientific level. IAO publishes original articles in the form of clinical and basic research, review articles, short reports and a limited number of case reports. Controversial patient discussions, communications on emerging technology, and historical issues will also be considered for publication.

Target audience of IAO includes physicians and academic people who are interested in both clinical and basic sciences.

Editorial and publication processes of the journal are shaped in accordance with the guidelines of the international organizations such as the International Council of Medical Journal Editors (ICMJE), the World Association of Medical Editors (WAME), the Council of Science Editors (CSE), the Committee on Publication Ethics (COPE), the European Association of Science Editors (EASE)

The Journal of International Advanced Otology is indexed in Science Citation Index Expanded, Index Copernicus, EBSCO, PROQUEST, SCOPUS.

IAO is funded by revenue generated by advertising as well as the support of the founder organization, The Mediterranean Society of Otology and Audiology.

Subscription information

The access to all full-text issues of the journal is free at www.advancedotology.org. The journal is distributed among the member of the Mediterranean Society of Otology and Audiology free of charge. To become a member of the society, please visit www.mediotol.org.

Permissions and Reprints

Permissions for reproduction of materials published and reprints in the Journal of International Advanced Otology should be requested from the editorial office at ozgirgin@politzersociety.org. Authors who submit color figures will receive an estimate of the cost for color reproduction.

Advertising

For requests concerning advertising, please contact the Publisher.

Publisher: AVES - İbrahim Kara

Address: Büyükdere cad. 105/9 34394 Mecidiyeköy, Şişli, İstanbul

Phone: +90 212 217 17 00 Fax: +90 212 217 22 92

Web page: www.avesyayincilik.com E-mail: info@avesyayincilik.com

Instructions for authors

Instructions for authors are published in the journal pages and could be accessed at the web site of the journal - www.advancedotology.org.

Material Disclaimer

Statements or opinions expressed in the manuscripts published in the Journal of International Advanced Otology reflect the views of the author(s) and not the opinions of the editors, the editorial board and the publisher; the editors, the editorial board and the publisher disclaim any responsibility or liability for such materials.

The journal is printed on an acid-free paper.



Instructions to Authors

The Journal of International Advanced Otology (IAO – Citation Abbreviation: Int Adv Otol) is the double-blind peer-reviewed, international publication organ of the Mediterranean Society of Otology and Audiology directed to an audience of physicians who are interested in both clinical and basic science. The Journal of International Advanced Otology publishes original articles in the form of clinical and basic research, review articles, short reports and a limited number of case reports. Controversial patient discussions, communications on emerging technology, and historical issues will also be considered for publication.

Editorial and publication processes of the journal are shaped in accordance with the guidelines of the international organizations such as the International Council of Medical Journal Editors (ICMJE), the World Association of Medical Editors (WAME), the Council of Science Editors (CSE), the Committee on Publication Ethics (COPE), the European Association of Science Editors (EASE)

The Journal of International Advanced Otology will only evaluate manuscripts submitted via the journal's self-explanatory online manuscript submission and evaluation system, manuscripts submitted via any other medium will not be evaluated.

Previously published manuscripts (except in the form of an abstract or a preliminary report), and manuscripts that are under consideration for possible publication elsewhere will not be accepted for evaluation.

The Journal of International Advanced Otology requires each submission to be accompanied by a Copyright Transfer Form, an Author Contributions Form and an ICMJE Form for Disclosure of Potential Conflicts of Interest.

Statements or opinions expressed in the manuscripts published in the Journal of International Advanced Otology reflect the views of the author(s) and not the opinions of the editors, the editorial board and the publisher; the editors, the editorial board and the publisher disclaim any responsibility or liability for such materials.

The final responsibility in regard to the published articles rests with the authors.

Each individual listed as an author should fulfil the authorship criteria recommended by the International Committee of Medical Journal Editors (Uniform Requirements for Manuscripts Submitted to Biomedical Journals. https://www.icmje.org). Individuals who contributed to the preparation of the manuscript but do not fulfil the authorship criteria should be acknowledged in an acknowledgments section, which should be included in the title page of the manuscript.

The Journal of International Advanced Otology requires and encourages the authors and the individuals involved in the evaluation process to disclose any existing or potential conflicts of interests including financial, consultant, institutional and other relationships that might lead to bias or a conflict of interest.

All sources of funding should be acknowledged in the manuscript.

The authors should state in the Materials and Methods section of the main text that experiments have been performed in comply with the ethical principles of the assigned institutional board or national committee. Application or approval number/year for the study should also be indicated. For animal experiments, the authors additionally should state that international standards regarding the animal care and handling have been followed during the experiments.

It is the author's responsibility to ensure that a patient's anonymity be carefully protected and to verify that any experimental investigation with human subjects reported in the manuscript was performed with informed consent and following all the guidelines for experimental investigation with human subjects required by the institution(s) with which all the authors are affiliated. For photographs that may reveal the identity of the patients, signed releases of the patient or of his/her legal representative should be enclosed; otherwise, patient names or eyes must be masked out to prevent identification.

When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration (JAMA 2000;284:3043–3049).

As part of submission of the manuscript, the correspondent author should send a short statement declaring that he/she accepts to undertake all the responsibility for authorship during the submission and review stages of the manuscript.

Originality, high scientific quality and citation potential are the most important criteria for a manuscript to be accepted for publication.

Manuscripts submitted to the journal will first go through a technical evaluation process where the editorial office staff will ensure that the manuscript is prepared and submitted in accordance with the journal's guidelines. Submissions that don't adhere the journal's guidelines will be returned back to the submitting author with technical correction requests. Manuscripts that adhere the journal's guidelines will be reviewed by at least 3 external peer reviewers during the evaluation process. The Editor in Chief is the final authority in the decision making process.

Authors of a paper accepted for publication in IAO should be in consent of that editors could make corrections without changing the basic meaning of the text of the manuscript.

The submitting authors will be automatically informed by the journal's manuscript submission and evaluation system of any changes in the status of their submission.



MANUSCRIPT PREPARATION

Manuscripts should be prepared in accordance with the ICMJE - Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (updated in December 2013 – available at www.icmje.org).

Original Investigations and Reviews should be presented according to the guidelines: randomized study – CONSORT, observational study – STROBE, study on diagnostic accuracy – STARD, systematic reviews and meta-analysis PRISMA, animal experimental studies – ARRIVE, nonrandomized behavioural and public health intervention studies – TREND.

Title page

A separate title page should be submitted with all submissions and should include the title of the manuscript, name(s), affiliations and major degree(s) of the author(s) and source(s) of the work or study, a short title (running head) of no more than 50 characters. The name, address, telephone (including the mobile phone number) and fax numbers and e-mail address of the corresponding author should be listed on the title page. Grant information and other sources of support should also be included on the Title page. Individuals who contributed to the preparation of the manuscript but do not fulfil the authorship criteria should be acknowledged in the title page.

Main Document

Abstract

All manuscripts should be accompanied an abstract. A structured abstract is required with original articles and it should include the following sub-headings: Objective, MATERIALS and Methods, Results and Conclusion. A structured abstract is not required with review articles and case reports. The abstract should be limited to 250 words for original articles and review articles and 150 words for case reports.

Key Words

Each submission should be accompanied by 3 to 5 key words which should be picked from the Medical Subject Headings (MeSH) list (<u>www.nlm.nih.gov/mesh/MBrowser.html</u>).

Main Text

The main text of Case Reports should be limited with 1200 words and should be structured with the following subheadings; Introduction, Case Presentation and Discussion. The maximum number of references cited in a case report should be 10.

The subheadings of the review articles should be planned by the authors. However, each review article should include a "Conclusion" section. The main text of review articles should be limited with 5000 words. The number of references cited should not exceed 50.

Original Articles should be structured with Introduction, Materials and Methods, Results subheadings Discussion. The number of references cited should not exceed 35 and the main text should be limited to 3000 words.

All acronyms and abbreviations used in the manuscript should be defined at first use, both in the abstract and the main text. The abbreviation should be provided in parenthesis following the definition.

Statistical analysis should be performed in accordance with guidelines on reporting statistics in medical journals (Altman DG, Gore SM, Gardner MJ, Pocock SJ. Statistical guidelines for contributors to medical journals. Br Med J 1983: 7; 1489-93.). Information on the statistical analysis process of the study should be provided within the main text.

When a drug, product, hardware, or software mentioned within the main text product information, including the name of the product, producer of the product, city of the company and the country of the company should be provided in parenthesis in the following format: "Discovery St PET/CT scanner (General Electric, Milwaukee, WI, USA)"

All references, tables and figures should be referred to within the main text and they should be numbered consecutively in the order they are referred to within the main text.

Limitations, drawbacks and shortcomings of original articles should be mentioned in the "Discussion" section before the conclusion paragraph.

References

References should be numbered consecutively in the order they are referred to within the main text and all references listed in the reference list should be referred to within the main text in parenthesis. Style and punctuation of each reference in the reference list should be in accordance with the examples listed below;

Standard journal article: Journal titles should be abbreviated in accordance with journal abbreviations used in Index Medicus (for journal abbreviations consult List of Journals indexed for MEDLINE published annually by NLM at http://www.nlm.nih.gov/tsd/serials/lji.html). When there are six or fewer authors, all authors should be listed. If there are seven or more authors, first 6 should be listed, followed by "et al.". A list of authors should be followed by the full title of the article, journal title, year, volume and page numbers.

Example: Pirvola U, Xing-Qun L, Virkkala J, Saarma M, Murakata C, Camoratto AM, et al. Rescue of hearing, auditory hair cells, and neurons by CEP-1347/KT7515, an inhibitor of c-Jun N-terminal kinase activation. J Neurosci 2000; 20: 43-50.



Books:

Chapter in a book: Sherry S. Detection of thrombi. In: Strauss HE, Pitt B, James AE, editors. Cardiovascular Medicine. St Louis: Mosby; 1974.p. 273-85.

Personal author(s): Cohn PF. Silent myocardial ischemia and infarction. 3rd ed. New York: Marcel Dekker; 1993.

Editor (s), compiler(s) as author: Norman IJ, Redfern SJ, editors. Mental health care for elderly people. New York: Churchill Livingstone; 1996.

Conference paper:

Bengisson S. Sothemin BG. Enforcement of data protection, privacy and security in medical informatics. In: Lun KC, Degoulet P, Piemme TE, Rienhoff O, editors. MEDINFO 92. Proceedings of the 7th World Congress on Medical Informatics; 1992 Sept 6-10; Geneva, Switzerland. Amsterdam: North-Holland; 1992. P. 1561-5.

Scientific or technical report:

Smith P. Golladay K. Payment for durable medical equipment billed during skilled nursing facility stays. Final report. Dallas (TX) Dept. of Health and Human Services (US). Office of Evaluation and Inspections: 1994 Oct. Report No: HHSIGOE 169200860.

Dissertation:

Kaplan SI. Post-hospital home health care: the elderly access and utilization (dissertation). St. Louis (MO): Washington Univ. 1995.

Article in electronic format:

Morse SS. Factors in the emergence of infectious diseases. Emerg Infect Dis (serial online) 1995 Jan-Mar (cited 1996 June 5): 1(1): (24 screens). Available from: http://www.cdc.gov/ncidodlEID/cid.htm.

Tables

Tables should be included in the main document and should be presented after the reference list. Tables should be numbered consecutively in the order they are referred to within the main text. A descriptive title should be provided for all tables and the titles should be placed above the tables. Abbreviations used in the tables should be defined below the tables by footnotes (even if they are defined within the main text). Tables should be created using the "insert table" command of the word processing software and they should be arranged clearly to provide an easy reading. Data presented in the tables should not be a repetition of the data presented within the main text but should be supporting the main text.

Figures and Figure Legends

Figures, graphics and photographs should be submitted as separate files (in TIFF or JPEG format) through the submission system. The files should not be embedded in a Word document or the main document. When there are figure subunits, the subunits should not be merged to form a single image. Each subunit should be submitted separately through the submission system. Images should not be labelled (a, b, c, etc.) to indicate figure subunits. Thick and thin arrows, arrowheads, stars, asterisks and similar marks can be used on the images to support figure legends. Like the rest of the submission, the figures too should be blind. Any information within the images that may indicate an individual or institution should be blinded. The minimum resolution of each submitted figure should be 300DPI. To prevent delays in the evaluation process all submitted figures should be clear in resolution and large in size (minimum dimensions 100x100mm)

Color figures: Authors who submit color figures will receive an estimate of the cost for color reproduction. Otherwise the figures will be converted to black and white.

Figure legends should be listed at the end of the main document. When there are figure subunits, the figure legends should be structured in the following format.

Example: Figure 4. a-d. Effects of xylitol on viability of HMEECs and HEI-OC1s. Xylitol at concentrations of up to 1000 μ g/mL did not decrease the viability of HMEECs and HEI-OC1s (a). Xylitol at concentrations of up to 1000 μ g/mL did not induce apoptosis or necrosis of HMEECs and HEI-OC1s (b, c). Morphology of HMEECs and HEI-OC1s remained unchanged by xylitol at concentrations of up to 1000 μ g/mL (light microscope, x200 and Hoechst 33342 staining, x400). The data shown are means±standard deviations of three repeated experiments from six samples (c, d)

Once a manuscript is accepted for publication it will be provided with a registered DOI number following the acceptance decision. Manuscripts accepted for publication by the Journal of International Advanced Otology will be published as ahead of print articles prior to the printing date of their scheduled issue. Corresponding author will be provided with a PDF Proof by the publisher once the production process of an accepted manuscript is over. The publisher will request the corresponding author to list their correction requests if there are any and approve the publication of the manuscript.

Subscription information

The access to all full-text issues of the journal is free at www.advancedotology.org. The journal is distributed among the member of the Mediterranean Society of Otology and Audiology. To become a member of the society, please visit www.mediotol.org.

Permissions and Reprints

Permissions for reproduction of materials published and reprints in the Journal of International Advanced Otology should be requested from the editorial office at ozgirgin@politzersociety.org.

Instructions for authors

Instructions for authors are published in the journal pages and could be accessed at the web site of the journal - www.advancedotology.org.



Contents

Original Articles

- | Enhancing the Sensitivity for Rinne Test through Tuning Fork Modifications Chun-Ju Lin, Te-Ming Tseng, Che-Hsuan Lin, Hsin-Te Hsu, How Tseng, Shih-Han Hung
- 5 Comparing the Effect of Different Permissible Exposure Limits on Hearing Threshold Levels above 25 dBA over Six Months Balachandar S. Sayapathi, Anselm Ting Su, David Koh
- 14 Effects of Button Pressing and Mental Counting on N100, N200, and P300 of Auditory-Event-Related Potential Recording Kimitaka Kaga, Tadanori Fukami, Naoyuki Masubuchi, Bunnoshin Ishikawa
- 19 Effects and Safety of Xylitol on Middle Ear Epithelial Cells Byung Don Lee, Moo Kyun Park
- Estrogen Reduces Caspase-3 Expression in the Inner Ear of Guinea Pigs Exposed to Simulated Microgravity and Inboard Noises of Spaceship
 Wang, Wei Wu, Haolun Han, Baowei Li, Gang Wang, Meng Yu
- 30 Evaluation of Skin Scars Following Cochlear Implant Surgery Thomas Braun, Thyra Langhagen, Alexander Berghaus, Eike Krause
- 33 Does Resveratrol Have a Protective Effect on Tympanosclerosis Formation in Experimentally Induced Otitis Media? Senem Çengel Kurnaz, Ahmet Aksoy, Dilek Güvenç, Tolga Güvenç, Abdurrahman Aksoy
- Preservation of Post Operative Bone Conduction Hearing after Labyrinthine Fistula Repair in Chronic Otitis Media with Cholesteatoma: A Review of 23 Cases
 Chang Hyun Cho, Ho Cherl Yang, Jae Hong Aum, Yong Woo Kim, Ju Hyoung Lee
- 44 Radiological Dehiscence of the Mastoid Portion of the Facial Nerve after Posterior Tympanotomy: Does It Lead to Increased Risk of Nerve Injury?

 Ambroso Lea Stovic Copper James P. Tyroma, Alea Fitzgerald O'Copper Dan Jiang
 - Ambrose Lee, Steve Connor, James R Tysome, Alec Fitzgerald O'Connor, Dan Jiang
- 48 The Isolated Vestibular Anomaly with Normal Cochlea: An Analysis of Radiologic and Clinical Findings Suzan Saylısoy, Armağan İncesulu, Ercan Kaya, Özgür Pınarbaşlı, Baki Adapınar
- 52 Time-Frequency Properties of Neonatal Transiently Evoked Otoacoustic Emissions Measured in Three Different Acquisition Modes W. Wiktor Jedrzejczak, Stavros Hatzopoulos, Piotr H. Skarzynski, Henryk Skarzynski
- 56 Tinnitus Pre and Post Translabyrinthine Acoustic Neurinoma Surgery
 Alimohamad Asghari, Parisa Omidian, Hesamedin Emamjomeh, Ahmad Daneshi, Shahin Rajaeih, Maryam Jalessi, Seyed Kamran Kamrava
- 60 Acute Mastoiditis in Children as Persisting Problem
 Dragoslava R Djeric, Miljan M Folic, Srbislav R Blazic, Igor B Djoric
- 64 | Factors Affecting Success and Results of Cartilage- Perichondrium Island Graft in Revision Tympanoplasty Murat Şahan, Serhan Derin, Mehmet Deveer, Ömer Sağlam, Neşat Çullu, Leyla Şahan
- 68 The Effects of Betahistine and Dimenhydrinate on Caloric Test Parameters; Slow-Phase Velocity of Nystagmus M. Mete Kıroğlu, Muhammed Dağkıran, Süleyman Özdemir, Özgür Sürmelioğlu, Özgür Tarkan
- 72 | Hearing Loss Related with Type 2 Diabetes in an Elderly Population Melih Çayönü, Mustafa Çapraz, Aydın Acar, Aytuğ Altundağ, Murat Salihoğlu
- 76 | The Effects of Nonylphenol on Hearing in Rats | Fatih Yücedağ, Erdoğan Okur, Cevdet Uğuz, Fahriye Zemheri, Selçuk Kuzu, Abdullah Ayçiçek, Orhan Kemal Kahveci

Case Reports

- 80 A Novel Way of Stimulation of the Inner Ear via Labyrinthotomy with Fully Implantable Active Middle Ear Implant, Carina Yıldırım A. Bayazıt, Hakan Tutar, Vildan Baştürk Tutar, Bülent Gündüz
- 84 An Aberrant Carotid Artery; Which Is Underlying Cause of Unilateral Objective Tinnitus Özgür Sürmelioğlu, Özgür Tarkan, Süleyman Özdemir, Can Özşahinoğlu
- 87 Clinical and Histological Features of Chorda Tympani Tumors
 Rafael Ramírez-Camacho, Almudena Trinidad, Carmen González Lois MDb, Isabel Salas MDb, Beatriz de Diego MDc, Amaya Roldán MDc,
 José María Verdaguer MDc, José Ramón García-Berrocal
- 91 Conductive Hearing Loss as the Initial Manifestation of Spontaneous Herniation of Epitympanic Meningocele Chao-Yin Kuo, Chih-Hung Wang, Hui-Ming Feng, Hsin-Chien Chen
- 94 | Inflammatory Myofibroblastic Tumor of the Middle Ear: An Unpredictable and Aggressive Disease Jae-Gu Cho, Naree Lee, Ik One Yoo, Sung-Won Chae
- 97 | Middle Ear Foreign Body Induced by Ear Molding Procedure: A Case-Report and a Literature Review | Joo Hyun Jung, Ju Young Paik, Seon Tae Kim, Heung Eog Cha
- 100 Stapes Crural Fracture without Perilymph Fistula by Q-Tip Injury Chul Ho Jang, Hyung Chae Yang, Tae Ho Um, Yong Beom Cho



Editorial

There are some milestones in a Journal's Publication Period. The new style based on scientific and ethical background, will create awareness and privilege. The Mediterranean Journal of Otology and Audiology was its initial label and with its impact The Journal found its place among the Science Citation Index Expanded. This empowered the Journal and also encouraged us to remodel its name and contents. By the year 2009 the new title of the Journal was "International Advanced Otology". The number of the articles increased to 25, while it was less than 10 before. The number of case reports have been limited to be less than one third of the whole contents. We felt that the Journal was ready for further evaluations by International Indexing Organizations while the rejection rate was over 50 percent.

It is very important for the Journal's reputation to be supported by Scientific Organizations and during this period, Politzer Society (The Society for Otologic Surgery and Science) gave its support to the Journal; even being in official relations with the Otology Neurotology.

The journal also supported International Meetings by publishing and disseminating abstracts as well as giving place to dedicated authors by publishing their experiences as reviews in supplements.

In the meantime, the ethical standards for publishing were rising and a new concept was needed for the Journal. Recently it moved to a new publisher that is already quite experienced. This has been the most recent move to remodel the printed journal as well as the website facilities. Even MJO was among the first journals to receive online submissions, the website remained old. A new user friendly website allowing preformatted applications to the authors as well as facilitating the review process was necessary.

Approaching its 10th year we decided construct a new image by also enlarging the Journal's vision and facilitating the review process to shorten the time for the final decision which was also criticized.

With the new volume covering the requested criteria for the ethics committee approval, type of peer review, contribution of authors in individual basis, conflict of interest information as well as the financial disclosure will be presented at the end of each study, even though before almost all were presented but unevenly.

I believe with the new face of the Journal strongly adhered to scientific and ethical standards it will grow with greater efficiency and increasing impact potential.

Sincerely.

Prof. Dr. O. Nuri Ozgirgin Editor in Chief