

ISSN: 2146-1414

# MIRT

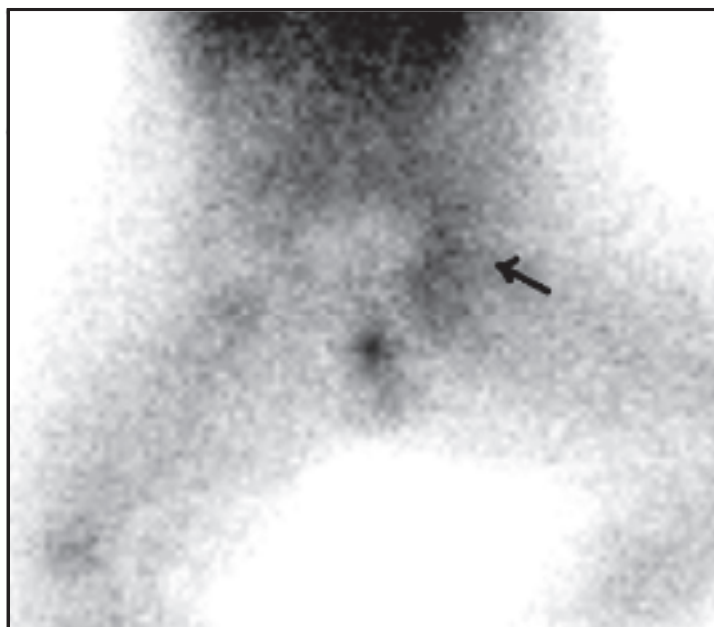
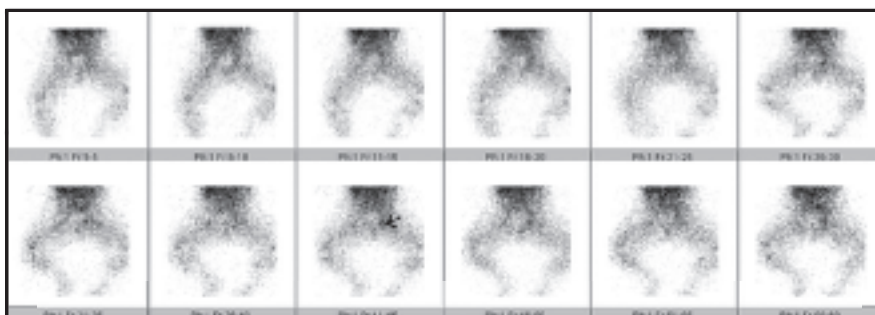
## Molecular Imaging and Radionuclide Therapy

December 2011

volume 20

issue 3

[www.tsnm.org](http://www.tsnm.org)



galenos

"Official Journal of the Turkish Society of Nuclear Medicine"



# MIRT

## Molecular Imaging and Radionuclide Therapy

The Owner On Behalf Of Turkish Society of Nuclear Medicine

Prof. Dr. Ömer Uğur

Editor in Chief

Prof. Dr. Hatice Durak

English Language Editor

Teoman Akçay

### Editorial Board

Emel Ada, *Turkey*  
Işık Adalet, *Turkey*  
Claudine Als, *Luxembourg*  
Neşe Atabey, *Turkey*  
Tamer Atasever, *Turkey*  
Marika Bajc, *Sweden*  
Kemal Baysal, *Turkey*  
Lorenzo Biassoni, *United Kingdom*  
Hans Jürgen Biersack, *Germany*  
Elvan Sayit Bilgin, *Turkey*  
Doğan Bor, *Turkey*  
Patrick Bourguet, *France*  
Zeynep Burak, *Turkey*  
Arturo Chiti, *Italy*  
Josep Martin Comin, *Spain*  
Alberto Cuocolo, *Italy*

Angelika Bischof Delaloye, *Switzerland*  
Mustafa Demir, *Turkey*  
Peter Joseph Ell, *United Kingdom*  
Taner Erselcan, *Turkey*  
Türkan Ertay, *Turkey*  
Jure Fettich, *Slovenia*  
Christiane Franzius, *Germany*  
Lars Friberg, *Denmark*  
Maria Lyra Georgosopoulou, *Greece*  
Gevorg Gevorgyan, *Armenia*  
Firat Gungor, *Turkey*  
Liselotte Højgaard, *Denmark*  
Erkan Ibis, *Turkey*  
Ora Israel, *Israel*  
Özlem Kapucu, *Turkey*  
Nevzat Karabulut, *Turkey*

Gamze Çapa Kaya, *Turkey*  
Suna Kırac, *Turkey*  
Irena Dimitrova Kostadinova, *Bulgaria*  
Georgios S Limouris, *Greece*  
Ayşe Mudun, *Turkey*  
Zehra Özcan, *Turkey*  
Serdar Özçelik, *Turkey*  
Mehmet Ali Özgüven, *Turkey*  
Francesca Pons, *Spain*  
İlknur Ak Sivriköz, *Turkey*  
Istvan Szilvasi, *Hungary*  
Mathew L Thakur, *United States*  
Perihan Ünak, *Turkey*  
Seher Ünal, *Turkey*  
Akin Yıldız, *Turkey*

### Turkish Society of Nuclear Medicine

Cinnah Caddesi Pilot Sokak No: 10/12 Çankaya 06650 Ankara, Turkey

Phone: +90 312 441 00 45

Fax: +90 312 441 12 95

Web: www.tsnm.org

E-mail: [dernekmerkezi@tsnm.org](mailto:dernekmerkezi@tsnm.org)

"Formerly Turkish Journal of Nuclear Medicine"

© The paper used to print this journal conforms to ISO 9706: 1994 standard (Requirements for Permanence).

The National Library of Medicine suggests that biomedical publications be printed on acid-free paper (alkaline paper). Reviewing the articles' conformity to the publishing standards of the Journal, typesetting, reviewing and editing the manuscripts and abstracts in English, creating links to source data, and publishing process are realized by Galenos.

### Publishing House

Molla Gürani Mah. Kaçamak Sk.

No: 21 34093 Fındıkzade-İstanbul

Phone: +90 212 621 99 25

Fax: +90 212 621 99 27

E-mail: [info@galenos.com.tr](mailto:info@galenos.com.tr)

Print at: Özgün Ofset Tic. Ltd. Şti.

Date of printing: January 2012

ISSN 2146-1414

 **galenos**



### INSTRUCTIONS TO AUTHORS

#### Focus and Scope

Molecular Imaging and Radionuclide Therapy (MIRT) publishes original research articles, reviews, editorials, short communications, letters, consensus statements, guidelines and case reports with a literature review on the topic, in the field of molecular imaging, multimodality imaging, nuclear medicine, radionuclide therapy, radiopharmacy, medical physics, dosimetry and radiobiology. MIRT is published by the Turkish Society of Nuclear Medicine three times a year (April, August, December). The journal is printed on an acid-free paper.

**Molecular Imaging and Radionuclide Therapy is indexed in TUBITAK-ULAKBIM, Gale/Cengage Learning and Ebsco.**

#### Open Access Policy

This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

#### GENERAL INFORMATION

MIRT commits to rigorous peer review, and stipulates freedom from commercial influence, and promotion of the highest ethical and scientific standards in published articles. Neither the Editor(s) nor the publisher guarantees, warrants or endorses any product or service advertised in this publication. All articles are subject to review by the editors and peer reviewers. If the article is accepted for publication, it may be subjected to editorial revisions to aid clarity and understanding without changing the data presented.

Manuscripts must be written in English and must meet the requirements of the journal. The journal is in compliance with the uniform requirements for manuscripts submitted to biomedical journals published by the International Committee of Medical Journal Editors (NEJM 1997; 336:309-315, updated 2001). Manuscripts that do not meet these requirements will be returned to the author for necessary revision before the review. Authors of manuscripts requiring modifications have a maximum of two months to resubmit the revised text. Manuscripts returned after this deadline will be treated as new submissions.

It is the authors' responsibility to prepare a manuscript that meets ethical criteria. The Journal adheres to the principles set forth in the Helsinki Declaration October 2008 (<http://www.wma.net/en/30publications/10policies/b3/index.html>) and holds that all reported research involving "Human beings" conducted in accordance with such principles. Reports describing data obtained from research conducted in human participants must contain a statement in the MATERIALS AND METHODS section indicating approval by the ethical review board and affirmation that INFORMED CONSENT was obtained from each participant.

- All manuscripts reporting experiments using animals must include a statement in the MATERIALS AND METHODS section giving assurance that all animals have received humane care in compliance with the Guide for the Care and Use of Laboratory Animals ([www.nap.edu](http://www.nap.edu)) and indicating approval by the ethical review board.
- Case reports should be accompanied by INFORMED CONSENT and the identity of the patient should be hidden.
- Subjects must be identified only by number or letter, not by initials or names. Photographs of patients' faces should be included only if scientifically relevant. Authors must obtain written consent from the patient for use of such photographs.
- If the proposed publication concerns any commercial product, the author must include in the cover letter a statement indicating that the author(s) has (have) no financial or other interest with the product or explaining the nature of any relations (including consultancies) between the author(s) and editor the manufacturer or distributor of the product.

#### MANUSCRIPT CATEGORIES

##### Original Articles

Short Communications are short descriptions of focused studies with important, but very straightforward results. These manuscripts should be no longer than 2000 words, and include no more than two figures and tables and 20 references.

Reviews address important topics in the field. Authors considering the submission of uninvited reviews should contact the editor in advance to determine if the topic that they propose is of current potential interest to the Journal. Reviews will be considered for publication only if they are written by authors who have at least three published manuscripts in the international peer reviewed journals and these studies should be cited in the review. Otherwise only invited reviews will be considered for peer review from qualified experts in the area.

Editorials are usually written by invitation of the editor by the editors on current topics or by the reviewers involved in the evaluation of a submitted manuscript and published concurrently with that manuscript.

Case Reports and Literatur Reviews are descriptions of a case or small number of cases revealing a previously undocumented disease process, a unique unreported manifestation or treatment of a known disease process, unique unreported complications of treatment regimens or novel and important insights into a condition's pathogenesis, presentation, and/or management. The journal's policy is to accept case reports only if accompanied by a review of the literature on the related topic. They should include an adequate number of images and figures.

Consensus Statements or Guidelines may be submitted by professional societies. All such submissions will be subjected to peer review, must be modifiable in response to criticisms, and will be published only if they meet the Journal's usual editorial standards. These manuscripts should typically be no longer than 4000 words and include no more than six figures and tables and 120 references.

Letters to the Editor may be submitted in response to work that has been published in the Journal. Letters should be short commentaries related to specific points of agreement or disagreement with the published work. Letters should be no longer than 500 words with no more than five complete references, and may not include any figures or tables.

#### Note on Prior Publication

Articles are accepted for publication on the condition that they are original, are not under consideration by another journal, or have not been previously published. Direct quotations, tables, or illustrations that have appeared in copyrighted material must be accompanied by written permission for their use from the copyright owner and authors. Materials previously published in whole or in part shall not be considered for publication. At the time of submission, authors must report that the manuscript has not been published elsewhere. Abstracts or posters displayed at scientific meetings need not be reported.

#### MANUSCRIPT SUBMISSION PROCEDURES

MIRT only accepts electronic manuscript submission at the web site [www.mirt.tsnmjournals.org](http://www.mirt.tsnmjournals.org). After logging on to the website Click the 'online manuscript submission' icon. All corresponding authors should be provided with a password and a username after entering the information required. If you already have an account from a previous submission, enter your username and password to submit a new or revised manuscript. If you have forgotten your username and/or password, please send an e-mail to the editorial office for assistance. After logging on to the article submission system please read carefully the directions of the system to give all needed information and attach the manuscript, tables and figures and additional documents.

#### All Submissions Must Include:

1. A cover letter requesting that the manuscript to be evaluated for publication in MIRT and any information relevant to your manuscript. Cover letter should contain address, telephone, fax and e-mail address of the corresponding author.
2. Completed Copyright Assignment & Affirmation of Originality form. This form should be filled in thoroughly and faxed to the MIRT Editorial Office at +90 212 621 99 27.
3. Completed Disclosure of Potential Conflict of Interest Form. The corresponding author must acquire all of the authors' completed disclosure forms and fax them to the editorial office at +90 212 621 99 27.

Authors must complete the online submission forms. If you are unable to successfully upload the files please contact the editorial office by e-mail.

There is no submission fee for MIRT.

#### MANUSCRIPT PREPARATION

##### General Format

The Journal requires that all submissions be submitted according to these guidelines:

- Text should be double spaced with 2.5 cm margins on both sides using 12-point type in Times Roman font.

- All tables and figures must be placed after the text and must be labeled.
- Each section (abstract, text, references, tables, figures) should start on a separate page.
- Manuscripts should be prepared as a word document (\*.doc) or rich text format(\*.rtf).
- Please make the tables using the table function in Word.
- Abbreviations should be defined in parenthesis where the word is first mentioned and used consistently thereafter.
- Results should be expressed in metric units. Statistical analysis should be done accurately and with precision. Please consult a statistician if necessary.

#### Title Page

The title page should include the following:

- Full title (in English and in Turkish) Turkish title will be provided by the editorial office for the authors who are not Turkish speakers. If you are not a native Turkish speaker, please re enter your English abstract to the area provided for the Turkish abstract.
- Authors' names and institutions.
- Short title of not more than 40 characters for page headings.
- At least three and maximum eight key words. (in English and in Turkish) Do not use abbreviations in the key words. Turkish key words will be provided by the editorial office for the authors who are not Turkish speakers. If you are not a native Turkish speaker, please re enter your English keywords to the area provided for the Turkish keywords.
- Word count (excluding abstract, figure legends and references)
- Corresponding author's e-mail and address, telephone and fax numbers
- Name and address of person to whom reprint requests should be addressed
- Any grants, fellowships or financial supports for the paper

#### Original Articles

- Abstract (in English and in Turkish) Original Articles should be submitted with a structured abstract of no more than 250 words. All information reported in the abstract must appear in the manuscript. The abstract should not include references. Please use complete sentences for all sections of the abstract. Structured abstract should include background, objective, methods, results and conclusions. Turkish abstract will be provided by the editorial office for the authors who are not Turkish speakers. If you are not a native Turkish speaker, please re enter your English abstract to the area provided for the Turkish abstract.

- Introduction
- Materials and Methods
- Results
- Discussion
- Conclusion

- Acknowledgements An acknowledgment may be given for contributors who are not listed as authors, or for grant support of the research

- References: References should be cited in numerical order (in parentheses) in the text and listed in the same numerical order at the end of the manuscript on a separate page or pages. The author is responsible for the accuracy of references. Examples of the reference style are given below. Further examples will be found in the articles describing the Uniform Requirements for Manuscripts Submitted to Biomedical Journals (Ann Intern Med.1988; 208:258-265, Br Med J. 1988; 296:401-405). The titles of journals should be abbreviated according to the style used in the Index Medicus.

Journal Articles and Abstracts: Surnames and initials of author's name, title of the article, journal name, date, volume number, and pages. All authors should be listed regardless of number. The citation of unpublished papers, observations or personal communications is not permitted. Citing an abstract is not recommended.

Books: Surnames and initials of author's names, chapter title, editor's name, book title, edition, city, publisher, date and pages.

#### Sample References

##### Journal Article:

Sayit E, Söylev M, Capa G, Durak I, Ada E, Yilmaz M, Durak H. The role of technetium-99m-HMPAO-labeled WBC scintigraphy in the diagnosis of orbital cellulitis. Ann Nucl Med 2001;15(1): 41-4.

Article with DOI Number:

Erselcan T, Hasbek Z, Tandogan I, Gumus C, Akkurt I. Modification of Diet in Renal Disease equation in the risk stratification of contrast induced acute kidney injury in hospital inpatients. Nefrologia 2009;. doi: 10.3265/Nefrologia.2009.29.5.5449.en.full.

Article in a journal published ahead of print:

Ludbrook J. Musculovenous pumps in the human lower limb. Am Heart J 2009; 00: 1-6 (accessed 20 February 2009).

##### Book Chapters:

Lang TF, Duryea J. Peripheral Bone Mineral Assessment of the Axial Skeleton: Technical Aspects. In: Orwoll ES, Blizotes M (eds), Osteoporosis: Pathophysiology and Clinical Management. New Jersey Humana Pres Inc; 2003; 83-104.

##### Books:

Greenspan A. Orthopaedic Radiology a Practical Approach.3th ed. Philadelphia, Lippincott Williams Wilkins 2000, 295-330

##### Website:

Smith JR. 'Choosing Your Reference Style', Online Referencing 2(3), <http://orj.sagepub.com> (2003, accessed October 2008).

##### -Tables:

Tables must be constructed as simply as possible. Each table must have a concise heading and

should be submitted on a separate page. Tables must not simply duplicate the text or figures. Number all tables in the order of their citation in the text. Include a title for each table (a brief phrase, preferably no longer than 10 to 15 words). Include all tables in a single file following the manuscript.

#### -Figure Legends

Figure legends should be submitted on a separate page and should be clear and informative.

#### -Figures

Number all figures (graphs, charts, photographs, and illustrations) in the order of their citation in the text. At submission, the following file formats are acceptable: AI, EMF, EPS, JPG, PDF, PPT, PSD, TIF. Figures may be embedded at the end of the manuscript text file or loaded as separate files for submission. All images MUST be at or above intended display size, with the following image resolutions: Line Art 800 dpi, Combination (Line Art + Halftone) 600 dpi, Halftone 300 dpi. Image files also must be cropped as close to the actual image as possible.

#### Review Articles:

- Title page (see above)
- Abstract (maximum 250 words; without structural divisions; in English and in Turkish . Turkish abstract will be provided by the editorial office for the authors who are not Turkish speakers.If you are not a native Turkish speaker, please re enter your English abstract to the area provided for the Turkish abstract.
- Text
- Acknowledgements (if any)
- References

#### Case Report and Literature Review:

- Title page (see above)
- Abstract (approximately 100-150 words; without structural divisions; in English and in Turkish. Turkish abstract will be provided by the editorial office for the authors who are not Turkish speakers. If you are not a native Turkish speaker, please re enter your English abstract to the area provided for the Turkish abstract.
- Introduction
- Case report
- Literature Review and Discussion
- References

#### Editorial:

- Title page (see above)
- Abstract (maximum 250 words; without structural divisions; in English and in Turkish. Turkish abstract will be provided by the editorial office for the authors who are not Turkish speakers. If you are not a native Turkish speaker, please re enter your English abstract to the area provided for the Turkish abstract.
- Text
- References

#### Letters to the Editor:

- Title page (see above)
- Short comment to a published work, no longer than 500 words, no figures or tables
- References no more than five

#### Proofs and Reprints

Proofs and a reprint order are sent to the corresponding author. The author should designate by footnote on the title page of the manuscript the name and address of the person to whom reprint requests should be directed.

The manuscript when published will become the property of the journal.

#### Archiving

The editorial office will retain all manuscripts and related documentation (correspondence, reviews, etc.) for 12 months following the date of publication or rejection.

#### Submission Preparation Checklist

As part of the submission process, authors are required to check off their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to these guidelines.

1. The submission has not been previously published, nor is it before another journal for consideration (or an explanation has been provided in Comments to the Editor).
2. The submission file is in Microsoft Word, RTF, or WordPerfect document file format. The text is double-spaced; uses a 12-point font; employs italics, rather than underlining (except with URL addresses); and the location for all illustrations, figures, and tables should be marked within the text at the appropriate points. Please do not send the manuscript in docx.
3. Where available, URLs for the references will be provided.



### INSTRUCTIONS TO AUTHORS

4. Upon acceptance of your manuscript for publication, a completed Copyright Assignment & Affirmation of Originality Form will be faxed to the MIRT Editorial Office (Fax: +90 212 621 99 27).

5. The text adheres to the stylistic and bibliographic requirements outlined in the Author Guidelines, which is found in About the Journal.

6. Completed Disclosure of Potential Conflict of Interest Form. The corresponding author must acquire all of the authors' completed disclosure forms and fax them, together, to the editorial office along with the Author Disclosure Summary.

#### TO AUTHORS

##### Copyright Notice

The author(s) hereby affirms that the manuscript submitted is original, that all statement asserted as facts are based on author(s) careful investigation and research for accuracy, that the manuscript does not, in whole or part, infringe any copyright, that it has not been published in total or in part and is not being submitted or considered for publication in total or in part elsewhere. Completed Copyright Assignment & Affirmation of Originality Form will be faxed to the MIRT Editorial Office (Fax: +90 312 441 00 45)

##### By signing this form,

1. Each author acknowledges that he/she participated in the work in a substantive way and is prepared to take public responsibility for the work.

2. Each author further affirms that he or she has read and understands the "Ethical Guidelines for Publication of Research".

3. The author(s), in consideration of the acceptance of the manuscript for publication, does hereby assign and transfer to the Molecular Imaging and Radionuclide Therapy all of the rights and interest in and the copyright of the work in its current form and in any form subsequently revised for publication and/or electronic dissemination.

##### Privacy Statement

The names and email addresses entered in this journal site will be used exclusively for the stated purposes of this journal and will not be made available for any other purpose or to any other party.

##### Peer Review Process

1. The manuscript is assigned to an editor, who reviews the manuscript and makes an initial decision based on manuscript quality and editorial priorities.

2. For those manuscripts sent for external peer review, the editor assigns at least two reviewers to the manuscript.

3. The reviewers review the manuscript.

4. The editor makes a final decision based on editorial priorities, manuscript quality, and reviewer recommendations.

5. The decision letter is sent to the author.

##### The Reviewer is Asked to Focus on the Following Issues:

1. General recommendation about the manuscript

How original is the manuscript?

Is it well presented?

How is the length of the manuscript?

2. Publication timing, quality, and priority

How important is the manuscript in this field?

Does it present original data?

Does it carry priority in publishing?

3. Specific questions regarding the quality of the manuscript

Does the title describe the study accurately?

Is the abstract informative and clear?

Do the authors state the study question in the introduction?

Are the methods clear?

Are ethical guidelines met?

Are statistical analyses appropriate?

Are the results presented clearly?

Does the discussion cover all of the findings?

Are the references appropriate for the manuscript?

4. Remarks to the editor

Accepted in its present form

Accepted after modest revisions

Reconsidered for acceptance after major changes

Rejected

5. Remarks to the author

What would be your recommendations to the author?

Conflict of interest statement for the reviewer (Please state if a conflict of interest is present)

#### Review

- 75** An Overview on Coronary Heart Disease (A Comparative Evaluation of Turkey and Europe) and Cost-effectiveness of Diagnostic Strategies  
*Koroner Kalp Hastalığına Genel Bakış (Türkiye ile Avrupa arasında Bir Karşılaştırma) ve Tanısal Stratejilerin Maliyet Etkinliği*  
Cengiz Taşçı, Nihat Özçelik; Gaziantep, Turkey

#### Original Articles

- 94** The Evaluation of Microcarcinoma in Differentiated Thyroid Cancers According to Old and New TNM Classification  
*Diferansiyeli Tiroid Kanserlerinde Eski ve Yeni TNM Sınıflamasına Göre Mikrokarsinomun Değerlendirilmesi*  
Zekiye Hasbek, Bülent Turgut, Taner Erselcan, Ayhan Koyuncu, Mehmet Fatih Börksüz, Nergiz Hacer Turgut, Fadime Yumuk; Sivas, Turkey
- 100** The Effect of the Excisional Biopsy in the Detection of the Sentinel Lymph Node By Lymphoscintigraphy and Intraoperative Gamma Probe in Breast Cancer  
*Meme Kanseri Lenfosintigrafi ve İntraoperatif Gama Prob ile Sentinel Lenf Nodu Saptanmasında Eksizyonel Biyopsinin Etkisi*  
Pelin Arıcan, İrfan Peksoy, Seniha Naldöken, Betül Bozkurt; Ankara, Turkey
- 104** The Effect of Patient Age on Standardized Uptake Value-Hounsfield Unit Values of Male Genitourinary Structures In F-18 FDG PET/CT  
*F-18 FDG PET/BT' de Erkek Genitoüriner Yapılarında Hasta Yaşının Standart Tutulum Değeri-Hounsfield Ünitesi Değerlerine Etkisi*  
Berrin Çavuşoğlu, Hatice Durak; İzmir, Turkey

#### Case Reports

- 108** Testicular Torsion in the Left Inguinal Canal in a Patient with Inguinal Hernia: A Difficult Case to Diagnose  
*İnguinal Hernili Bir Hastada Sol İnguinal Kanalda Testis Torsiyonu: Tanısı Zor Bir Olgu*  
Alihan Erdoğan, Emel Ceylan Günay, Gökhan Gündoğdu, Dincer Avlan; Mersin, Turkey
- 111** Graves' Disease with Exophtalmia in a Two-Year Old Child  
*İki Yaşında Bir Çocukta Graves Hastalığına Bağlı Ekzoftalmus*  
Hülya Yalçın, Bülent Akçora, Ali Balcı; Hatay, Turkey
- 114** Metformin-Induced Intense Bowel Uptake Observed on Restaging FDG PET/CT Study in a Patient with Gastric Lymphoma  
*Gastrik Lenfoma Tanılı Olguda Yeniden Evreleme FDG PET/BT Görüntülemesinde Kolonda Metformin Kullanımına Sekonder Yoğun FDG Tutulumu*  
Sabire Yılmaz, Meftune Özhan, Sait Sager, Duygu Yörük Atik, Metin Halac, Kerim Sönmezoğlu; İstanbul, Turkey
- 117** Somatostatin Receptor Scintigraphy Findings in a Patient with Metastatic Gastrinoma and MEN 1 Syndrome  
*Metastatik Gastrinomali ve MEN 1 Sendromlu Hastada Somatostatin Reseptör Sintigrafisi Bulguları*  
Gözde Mütevelizade, Mehmet Aydın, Ahmet Sezer; Ankara, Turkey
- 121** 2011 Referee Index
- 122** 2011 Author Index
- 123** 2011 Subject Index