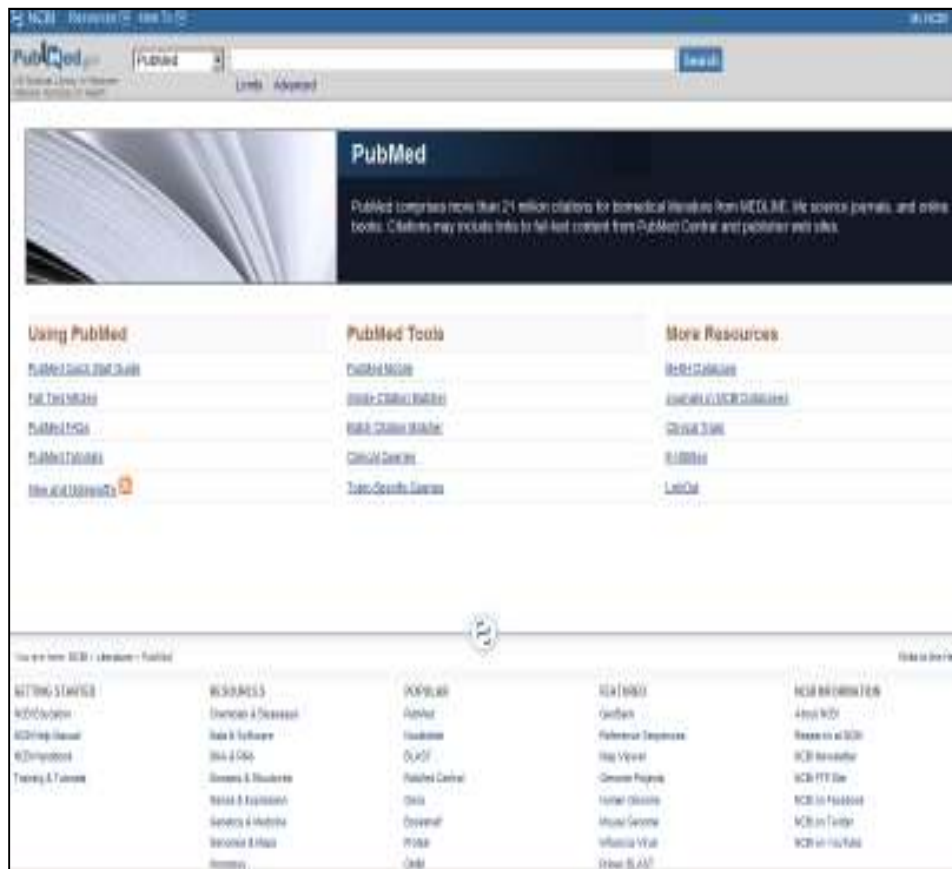


PubMed

<http://www.ncbi.nlm.nih.gov/sites/entrez?holding=ijphirlib>



- 米国国立医学図書館 (National Library of Medicine) 内NCBIが開発・提供する、医学・歯学・薬学及び関連領域約4800誌の文献データベース
- 収録データの範囲
1951年～現在まで
- インターネット接続環境ならどこでも
(学内端末から入ると、電子ジャーナルが利用できる)

PubMedで検索してみよう！

The image shows a screenshot of the PubMed website interface. At the top, there is a navigation bar with 'NCBI Resources' and 'How To'. Below that is the 'PubMed.gov' logo and the text 'US National Library of Medicine National Institutes of Health'. A search bar contains the text 'internal exposure X-radiation ct' and a 'Search' button. A yellow callout bubble points to the search bar with the text '検索開始'. Another yellow callout bubble points to the search bar with the text '絞り込み検索'. A third yellow callout bubble points to the search bar with the text 'キーワードや著者名、雑誌名(フルタイトルか略誌名)などを入れて検索します'. Below the search bar, there is a banner image of a book. At the bottom, there are three columns of links: 'Using PubMed' (PubMed Quick Start Guide, Full Text Articles, PubMed FAQs, PubMed Tutorials, New and Noteworthy), 'PubMed Tools' (PubMed Mobile, Single Citation Matcher, Batch Citation Matcher, Clinical Queries, Topic-Specific Queries), and 'More Res' (MeSH Databas, Journals in NC, Clinical Trials, E-Utilities, LinkOut).

PubMed検索結果 詳細表示画面

略誌名、出版年、巻号、頁

論題

Abstractでどんな内容の論文なのかが分かります

このアイコンは論文を入手するためのアイコンです。弘前大学の所蔵検索や電子ジャーナルにリンクしています。

PMID(文献複写申込み時に使用)

PubMed
US National Library of Medicine
National Institutes of Health

Pubmed
Limits Advanced

Display Settings: Abstract

J Nucl Med Technol, 2010 Sep;30(3):138-48.

Assessment of patient exposure to X-radiation from SPECT/CT scanners.

Hara N, Onozuchi M, Takanaka K, Matsuhara K, Ueta H, Kenko Y.
Department of Radiology, Sumitomo Hospital, Nakaresshina, Kita-ku, Osaka, Japan. hara-norihito@sumitomo-hp.or.jp

Abstract

In the operation of any SPECT/CT system, in addition to internal radiation exposure (gamma-ray) resulting from administration of radiopharmaceuticals, external radiation exposure (x-ray) from the CT device has to be taken into consideration in the light of recommendations from the International Commission on Radiological Protection. These recommendations include justification of practices (the use of radiation produces sufficient benefit to offset any risks caused by the use of radiation), optimization (the incurred exposure by the use of radiation should be kept as low as reasonably achievable), and dose limitation. The internal radiation exposures of each organ after administration of radiopharmaceuticals are calculated by the MIRD Committee method. For example, the internal radiation exposure index for brain perfusion scintigraphy is 0.8 mGy/37 MBq for N-isopropyl-4-iodoamphetamine(123I) hydrochloride or 0.19 mGy/37 MBq for ethyl cysteinate dimer. On the other hand, the external radiation exposure from a CT device is calculated using the CT dose index volume (CTDIvol)—a measured and calculated value unique to the CT scanner and scan parameters used—and a dose-length product, which is obtained from CT conditions and generally used as a reference value for CT radiation exposure. However, CTDIvol and dose-length product are calculated values unique to each device, not the value of external radiation exposures of each organ. Therefore, we believe that it is necessary to measure the total (internal plus external) radiation exposure dose from CT. In the present study, using an anthropomorphic phantom for deep-body total absorbed dose measurement, we evaluated the radiation exposure doses (organ-absorbed doses) of each organ under various CT conditions.

METHODS: The radiation exposure doses of each organ were measured by inserting thermoluminescent dosimeter elements into the phantom under various CT conditions.

RESULTS: The following were brain radiation exposure doses in the head region. For 90 kVp and 25 mAs, 1.39 mGy (CTDIvol, 1.8 mGy), for 90 kVp and 300 mAs, 17.00 mGy (CTDIvol, 21.2 mGy), for 120 kVp and 25 mAs, 3.21 mGy (CTDIvol, 3.8 mGy), for 120 kVp and 300 mAs, 37.79 mGy (CTDIvol, 47.7 mGy), for 140 kVp and 25 mAs, 5.08 mGy (CTDIvol, 5.5 mGy), and for 140 kVp and 300 mAs, 65.07 mGy (CTDIvol, 65.6 mGy). The eye radiation exposure doses were as follows. For 90 kVp (CTDIvol, 1.8 mGy), for 90 kVp and 300 mAs, 20.31 mGy (CTDIvol, 21.2 mGy), for 120 kVp and 25 mAs, 3.71 mGy (CTDIvol, 3.8 mGy), for 120 kVp and 300 mAs, 37.79 mGy (CTDIvol, 47.7 mGy), for 140 kVp and 25 mAs, 5.44 mGy (CTDIvol, 5.5 mGy), and for 140 kVp and 300 mAs, 69.76 mGy (CTDIvol, 65.6 mGy). In addition, exposure doses of the cervical, thoracic, abdominal, and pelvic regions were measured in detail.

CONCLUSION: Our estimated external radiation exposure doses (x-ray) of each organ under various CT conditions, along with the internal radiation exposure doses (gamma-ray) resulting from the administration of radiopharmaceuticals, seem to be useful as reference values in understanding the radiation exposure dose from SPECT/CT examinations.

PMID: 20807855 [PubMed - indexed for MEDLINE] Free full text

Mesh terms

LinkOut - more resources

Final Version FREE
[Full Med Text]

LIBRARY
Full-text
Hospital

Send to:

Related citations

A Monte Carlo based method to estimate radiation dose from multidetector CT. [Phys Med Biol. 2005]

Review X-ray exposure dose control for x-ray CT system. [Igaku Butsuri. 2002]

Radiation dose evaluation in multidetector-row CT imaging for acute stroke with ai [Br J Radiol. 2010]

Radiation dose evaluation in 64-slice CT examinations with adult and pa [Br J Radiol. 2009]

Review Techniques and parameters for estimating radiation dose from CT. [Int J Cardiovasc Imaging. 2005]

See reviews...

See all...

Recent activity

Assessment of patient exposure to X-radiation from SPECT/CT scanners

Turn Off Clear

PubMed検索のポイント

- ・キーワードが複数ある場合にはスペースで区切って入れる(AND検索)
- ・語尾に変化があるものをまとめて検索したい時は* (アスタリスク)をつける
ex. chromatogra* で検索 → chromatograph, chromatography, chromatogram
- ・大文字・小文字の区別はなし(ただし論理演算のAND、OR、NOTは必ず大文字で)
- ・著者名で検索する時→姓・名・ミドルネームの順に入力
ex. William C. Cole 氏の場合→ Cole WC(名とミドルネームはイニシャルで)
- ・雑誌名はフルネームで入れるかPubMed指定の略誌名で入れる
(初期画面左Single Citation Matcherで誌名の一部を入れると候補が出てくる)
- ・著者名や雑誌名の後に論文の「開始頁ー終了頁」を入れて検索すると早い
ex. Smith rw 906-913 とか j immunol 4846-4853 など
- ・詳細画面で雑誌タイトルをクリックしjournalsにリンクするとISSNや正式誌名がでる