LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

Judul Karya Ilmiah (Artikel)	:	Comparisons of Hounsfield Unit Linearity between Images Reconstructed using an Adaptive Iterative Dose Reduction (AIDR) and a Filter Back-Projection (FBP) Techniques		
Jumlah Penulis	:	5 Orang		
Status Pengusul	:	~~Penulis pertama~~/ Penulis ke 2/ Penulis Korespondesi **		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	Journal of Biomedical Physics and Engineering
		b. Nomor ISSN	:	2251-7200
		c. Volume, Nomor, Bulan, Tahun	:	Vol. 10 No. 2, April 2020
		d. Penerbit	:	Shiraz University of Medical Sciences
		e. DOI artikel (jika ada)	:	10.31661/JBPE.V0I0.1912-1013
		f. Alamat web jurnal	:	https://jbpe.sums.ac.ir/
		g. Terindeks di Scimagojr/Scopus ~~atau di….~~**		
Kategori Publikasi Jurnal Ilmiah (beri ✓pada kategori yang tepat)	:	☑ ~~Jurnal Ilmiah Internasional~~ / Internasional Bereputasi **		
		☐ Jurnal Ilmiah Nasional Terakreditasi		
		☐ Jurnal Ilmiah Nasional/Nasional Terindeks di DOAJ, CABI, COPERNICUS**		

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	Reviewer I	Reviewer II	
a. Kelengkapan unsur isi jurnal (10%)	3,8	3,7	3,75
b. Ruang lingkup dan kedalaman pembahasan (30%)	11,8	11,1	11,45
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d. Kelengkapan unsur dan kualitas penerbit (30%)	11,5	11,6	11,55
Total = (100%)	**38,9**	**37**	**37,95**
Nilai untuk Pengusul : (40% x 37,95) = 15,18			

Semarang, 1 Desember 2021

Reviewer 1

Prof. Dr. Drs. Muhammad Nur, DEA
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Bidang ilmu/Unit kerja : Fisika/Fakultas Sains dan Matematika

Reviewer 2

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LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

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Nama/ Jumlah Penulis	:	5 Orang		
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		e. DOI artikel (jika ada)	:	10.31661/JBPE.V0I0.1912-1013
		f. Alamat web jurnal	:	https://jbpe.sums.ac.ir/
		Alamat Artikel	:	https://jbpe.sums.ac.ir/article_46363.html
		g. Terindex	:	Scopus

Kategori Publikasi Jurnal Ilmiah (beri ✓pada kategori yang tepat)	:	☑ ~~Jurnal Ilmiah Internasional~~/Internasional Bereputasi
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a. Kelengkapan unsur isi jurnal (10%)	4			3,8
b. Ruang lingkup dan kedalaman pembahasan (30%)	12			11,8
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12			11,8
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12			11,5
Total = (100%)	**40**			**38,9**
Nilai Pengusul = 40% x 38,9 = 15,56				

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2. **Ruang lingkup dan kedalaman pembahasan:**
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Semarang, 29 Desember 2021
Reviewer 1

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LEMBAR
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		f. Alamat web jurnal	:	https://jbpe.sums.ac.ir/
		Alamat Artikel	:	https://jbpe.sums.ac.ir/article_46363.html
		g. Terindex	:	Scopus

Kategori Publikasi Jurnal Ilmiah (beri ✓pada kategori yang tepat) :

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	Internasional [√]	Nasional Terakreditasi [ ]	Nasional Tidak Terakreditasi [ ]	
a. Kelengkapan unsur isi jurnal (10%)	4			3,7
b. Ruang lingkup dan kedalaman pembahasan (30%)	12			11,1
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12			10,6
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12			11,6
Total = (100%)	**40**			**37**
Nilai Pengusul = 40% x 37 = 14.8				

Catatan Penilaian artikel oleh Reviewer :

1. **<u>Kesesuaian dan kelengkapan unsur isi jurnal:</u>**
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2. **<u>Ruang lingkup dan kedalaman pembahasan:</u>**
   Substansi artikel yaitu tentang perbandingan HU unit pada rekonstruksi tomografi menggunakan metode iterasi san metode backprojection telah sesuai dengan ruang lingkup jurnal, dengan kedalaman pembahasan sangat baik
3. **<u>Kecukupan dan kemutakhiran data/informasi dan metodologi:</u>**
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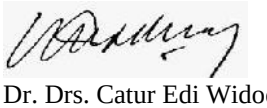
Semarang, 23 Nopember 2021
Reviewer 2



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Comparisons of hounsfield unit linearity between images reconstructed using an adaptive iterative dose reduction (AIDR) and a filter back-projection (FBP) techniques

Suyudi I.[a], Anam C.[a], Sutanto H.[a], Triadyaksa P.[a], Fujibuchi T.[b]

Save all to author list

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Abstract

Author keywords

Indexed keywords

Device tradenames

SciVal Topics

Chemicals and CAS Registry Numbers

Metrics

Funding details

Abstract

Background: The HU linearity is an essential parameter in a quantitative imaging and the treatment planning systems of radiotherapy. Objective: This study aims to evaluate the linearity of Hounsfield unit (HU) in applying the adaptive iterative dose reduction (AIDR) on CT scanner and its comparison to the filtered back-projection (FBP). Material and Methods: In this experimental phantom study, a TOS-phantom was scanned using a Toshiba Alexion 6 CT scanner. The images were reconstructed using the FBP and AIDR. Measurements of HU and noise values were performed on images of the "HU linearity" module of the TOS-phantom. The module had five embedded objects, i.e., air, polypropylene, nylon, acrylic, and Delrin. On each object, a circle area of 4.32 cm^2 was drawn and used to measure HU and noise values. The R^2 of the relation between mass densities vs. HU values was used to measure HU linearities at four different tube voltages. The Mann-Whitney U test was used to com-pare unpaired data and p-value < 0.05 was considered statistically significant. Results: The AIDR method produced a significant smaller image noise than the FBP method (p-value [removed] 0.05). The HU values acquired by the methods showed the same linearity marked by coinciding linear lines with the same R^2 value (> 0.999). Conclusion: AIDR methods produce the HU linearity as FBP methods with a smaller image noise level.

Author keywords

AIDR; FBP; HU Linearity; Imaging; Phantoms; Radiation Dosage; Tomography Scanners; X-Ray Computed

Indexed keywords

Device tradenames

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Chemicals and CAS Registry Numbers

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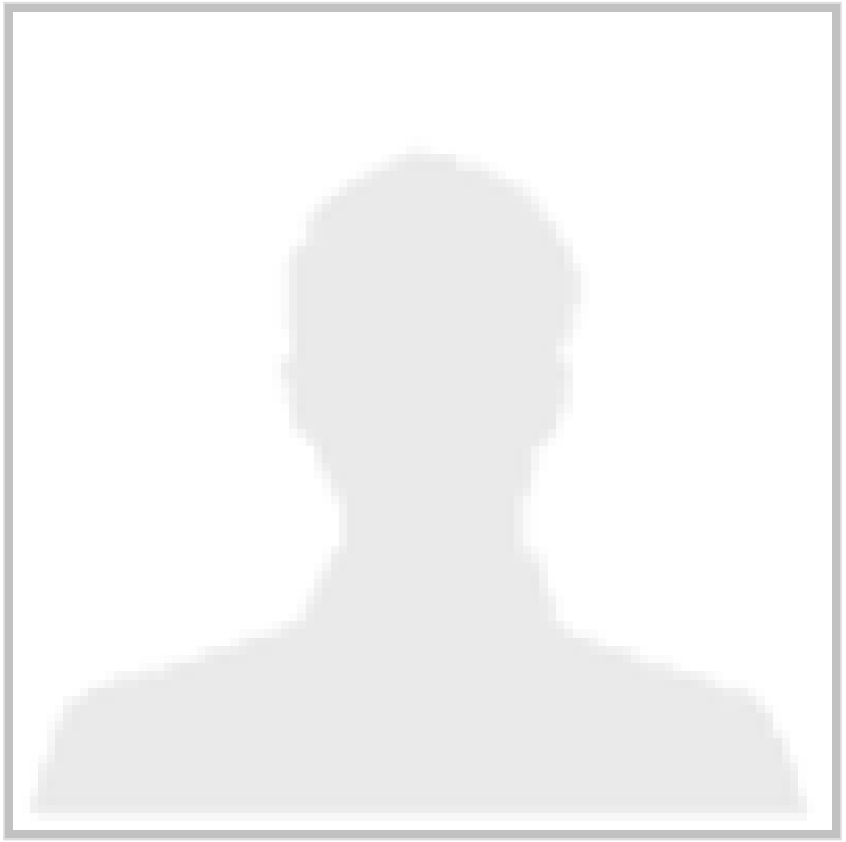

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Assessment of Patient Absorbed Radiation Dose during Hysterosalpingography: A Pilot Study in Southwest Nigeria

Achuka J. A.[1]*, Aweda M. A.[2], Usikalu M. R.[1], Aborisade C. A.[3]

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ABSTRACT

Background: Hysterosalpingography (HSG) is an indispensable tool for diagnosing infertility in females. The procedure exposes female reproductive organs to ionizing radiation as the genitals are irradiated during the process. Investigating patient absorbed dose during the procedures is essential for effective radiological protection of the patient.

Objective: This study aims to investigate the radiation dose received by patient during HSG examination in the study environment in order to enhance optimization of procedures and the associated dose, thereby minimizing radiation risks.

Material and Methods: The prospective pilot study, was conducted in four tertiary healthcare institutions in Southwest Nigeria. Thermoluminescence dosimeter (TLD 100) was used to determine the Entrance Surface Dose (ESD) of 80 patients presented for HSG investigation. The corresponding effective dose, ovary, uterus and urinary bladder doses were evaluated using PCXMC software.

Results: The mean entrance surface doses (ESD) obtained from the four centers were 18.58±6.31 mGy, 15.18±2.27 mGy, 17.44±3.43 mGy and 34.24±11.98 mGy for SW1, SW2, SW3 and SW4 centers, respectively. The corresponding mean of effective doses were 1.54±0.63 mSv, 1.24±0.28 mSv, 1.41±0.30 mSv and 2.53±0.94 mSv for SW1, SW2, SW3 and SW4 centers, respectively. The resulting mean doses to the ovary, urinary bladder and uterus were also presented.

Conclusion: The results obtained in general are comparable with international standards. It was, however, recommended that study centers with high doses should conduct dose audit in order to enhance patient safety.

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Keywords

Hysterosalpingography; Thermoluminescence Dosimeters; Entrance Surface Dose; Effective Dose; Organ Doses; Radiation Protection; Patient Safety

Introduction

Hysterosalpingography (HSG) is an X-ray diagnostic procedure for imaging of the uterus and fallopian tubes. Its applications consist of diagnosing causes of infertility in females, showing areas of scarring inside a fallopian tube or changing in the uterine cavity, evaluating patients who have had several miscarriages, investigating patients prior to myomectomy, diagnosing cervico-uterus anomalies and locating intrauterine device that cannot be seen on a pelvic examination [1-3].

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Changes in the Radiation Toxicity of Human Lymphoblastic T-cell Line (Jurkat) by a Common Pesticide: Diazinon

Ghasemi Sh.[1], Shabestani Monfared A.[2,3*], Zabihi E.[4], Khoshbin Khoshnazar A.[5], Asadi J.[6], Abedian Z.[7], Borzoueisileh S.[7,8]

ABSTRACT

Background: Diazinon is one of the most common pesticides in the world playing a similar role to radiation and it could cause DNA breaks and genetic effects.

Objective: In this study, radiosensitivity of a lymphoblastic cell line pretreated by Diazinon was investigated.

Material and Methods: In this case-control study, the human lymphoblastic T-cell line was divided into 6 groups based on receiving radiation or/and Diazinon. After that, the DNA damage, in all of the groups, were counted by cytokinesis-block micronuclei assay using different indices.

Results: The mean frequency of micronuclei, nuclear bridges and nuclear buds in cell groups exposed by both Diazinon and radiation were remarkably higher than the other groups which just received radiation or Diazinon alone. The interaction between radiation and Diazinon treatment was statistically significant for NBUDS index.

Conclusion: The results indicated that the Diazinon contamination could affect the radiosensitivity index of cancerous cells while further molecular and in-vivo studies are needed to investigate genetic and toxic effects of Diazinon on DNA and its repair system.

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Keywords

Pesticides; Diazinon; Jurkat Cells; Radiotherapy; Radiation Tolerance

Introduction

Diazinon (O, O-diethyl-O-[2-isopropyl-6-methyl-4-pyrimidinyl] phosphorothioate), is an organophosphate pesticide which extensively is used in agriculture and household insect control [1]. Pesticides uses are aimed to control pests, weeds, and plant diseases. They cause chromosomal alteration and DNA damage and also are associated with various cancers [2]. One type of cancers that is in direct relevance with pesticides such as Diazinon use is Lymphoma (Hodgkin, non-Hodgkin and multiple myelomas), especially non-Hodgkin form [3].

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