



شبكة المعلومات الجامعية

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شبكة المعلومات الجامعية
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شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

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علي هذه الأفلام قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

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بعض الوثائق الأصلية تالفة

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**Role of Tc-99m Sestamibi and Triple phase bone scan in
assessment of response of bone sarcomas to treatment**

Thesis

**Submitted in partial fulfillment of the degree of Msc in Nuclear
Medicine**

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Role of Tc-99m sestamibi and Tl-201 : بالغة الانجليزية :
Phase bone scan in assessment of response of bone
scan to treatment

باللغة العربية : دور التثنيوم بيتا في المسح الذري للعظام في
تقييم علاج أورام العظام السرطانية الأولية

بناءً على موافقة الجامعة بتاريخ ٨ / ١١ / ١٤٠٠م تم تشكيل لجنة الفحص والمناقشة للرسالة المذكورة أعلاه على النحو التالي :-

- (١) انداخته صبر و صفا
عن المشرفين
- (٢) انداخته صبر و صفا
ممتحن داخلي
- (٣) انداخته صبر و صفا
ممتحن خارجي

بعد فحص الرسالة بواسطة كل عضو منفردا وكتابة تقارير منفردة لكل منهم لتعقدت اللجنة مجتمعة في يوم السنه بتاريخ ١٠ / ٩ / ١٤٠١ بمصر على ارجح ايام الاسباب الخوف بكلية الطب - جامعة القاهرة وذلك لمناقشة الطالب في جلسة علنية في موضوع الرسالة والنتائج التي توصل اليها وكذلك الامس العلمية التي قام عليها البحث .

قرار اللجنة: قبول المراسلة الطبية وتنسيقها مع كليات
الزراعة

توفيقات أعضاء اللجنة :-

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Abstract Form

**TC-SESTA MIBI AS PREDICTOR OF CHEMOTHERAPY
RESPONSE IN BONE SARCOMA**

Objective: Chemotherapy is the initial treatment in bone sarcoma which may be followed by surgery or radiotherapy in patients with good response. Attempt to assess response to therapy in relation to histopathologic evaluation is mandatory.

Material & methods: 28 patients with bone sarcoma (18 osteosarcoma, 10 Ewing sarcoma) with their age ranged 8-19 years were included. The group is formed of 24 males and 4 females. Pre-chemotherapy assessment was done using 20 mCi of ^{99m}Tc -MDP WBS with imaging at 10 min., 3 hours to assess the primary lesion and exclude metastatic spread. Whereas ^{99m}Tc -MIBI in a dose of 20 mCi with early images at 20 min. and late images at 2 hours were done before and after 3-4 courses of chemotherapy. Correlation of Tc-MIBI scan with the percentage of necrosis histopathologically was possible in 19 patients following surgical removal of involved limb. The remaining 9 patients were assessed clinically and radiologically versus Tc-MIBI scan for a period ranging 6-12 months.

Results: Good response was evident in 12 patients with marked changes in qualitative images from high to no or mild uptake with significant decrease in mean ^{99m}Tc -MIBI ratio 2.57, 2.07 in early & late images to 0.95 & 0.89 ($P < 0.01$). 9 patients of osteosarcoma in this group showed > 90% necrosis in the surgically removed limb, while the other 3 Ewing sarcoma had no viable tumor in ^{99m}Tc -MIBI scan with no evidence of clinical or radiologic recurrence for 6-12 months. The second group with partial response showed some change in qualitative images from high to moderate degree in post chemotherapy scan. Also, mean quantitative Tc-MIBI in early & late images were 5.03, 5.02 before chemotherapy and changed to 2.77, 2.43 following chemotherapy with significant difference ($P < 0.05$). The percentage of necrosis in this group ranged 50-90%. The third group with no response had no change in qualitative images before and after chemotherapy. Also, the mean early & late quantitative Tc-MIBI ratio before chemotherapy were 2.93, 2.69 with no change following chemotherapy with mean values of 3.8, 2.8 respectively. This group had necrosis < 50% histopathologically.

To conclude: Tc-MIBI scan is a good methods for assessment of chemotherapy response with significant correlation to histopathologic change.

Key words: Tc-sesta mibi, Tc-MIBI scan, osteosarcoma, Ewing sarcoma, bone sarcomas, response

LIST OF ABBREVIATIONS

A.T.P.ase	Adenosine triphosphatase
C.T.	Computerized Tomography
Ca ⁺⁺	Calcium ion
Cc	Cubic centimeter
CGy	Centigray
D.N.A.	Deoxy ribonucleic acid
E.S.	Ewing's sarcoma
FDG	Fluoro-deoxy glucose
Fig	Figure
Ga-67	Gallium-67 citrate
G.I.T.	Gastrointestinal tract
Gy	Gray
HDMXT	High dose methotrexate
Hrs	Hours
K ⁺	Potassium ion
Kev	Kilo electron volt
Kg.	Kilogram
L.D.H	Lactate dehydrogenase
L/N	Lesion to normal
mCi	Millicurie
M.D.P.	Methylene diphosphonate
M.F.H.	Malignant fibrous histiocyoma
Mg ⁺⁺	Magnesium ion

MIBI

Methoxy isobutyl isonitrite

min

Minutes

M.R.I.

Magnetic resonance imaging

Na⁺

Sodium ion

N.C.I.

National Cancer Institute

O.S.

Osteosarcoma

P.E.T.

Positron emission Tomography

P.I.

Post-injection

PPENT

Peripheral primitive neuro-ectodermal tumour

R.N.A.

Ribonucleic acid

SPECT

Single photon emission computerized Tomography

Tc-99m

Technetium-99m

Tl-201

Thallium-201 chloride



Greater than



Lesser than



Greater than or equal to



Lesser than or equal to