

## **Dedication**

I would like to dedicate the benefits of this research to my parents (Ahmed & Hamamah) who are encourage me to follow the spiral of education

To my lovely waive (Shafikah) and my brothers (AL-Ezzi & Fatehi)

To Dr. Mohamed Ahmed and Dr. Mohamed alfadel

To my best friends (Lemiaa, Amer and Amin)

To my colleagues

To any one that help me in this research

## **ACKNOWLEDGEMENT**

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**Finally I would like to thank everyone who has participated in the completion of the research.**

## **Abstract**

**This study focused on the bone metastasis from breast cancer, therefore the main objective of this study was to determine the racial (Tribe) distribution and the geographical distribution of breast cancer using many diagnostic screening ,specialties (Bone scan) in Yemen. This study was conducted at Radiation and Isotopes Center in Sanaa at the nuclear medicine department, in the period from Jan 2010 to Jun 2011. The data were**

**collected from 50 patients with breast cancer. <sup>99</sup>mTc-MDP was administered to the patients intravenously (20 mci) and gamma camera 'Philips' was used. By using excel. The result showed the anatomical site of breast cancer metastasis in skeletal system, it reveals the predominant anatomical site being involved by breast cancer secondaries were the Chest(ribs), Column vertebrae (C.v + Th.v + L.v) , skull, pelvis, upper and lower extremities and other organ (liver, lung ), which taking 19%, (5,2%, 12.1% ,10.3%), 12.1%, 13.8%, 8.6%, 12.1 &6.9% respectively. While the spread to ribs and column vertebrae common metastasis on skeletal bone, And the incidence of breast cancer was linearly associated with the age.**

## **الخلاصة:**

**هذه الدراسة اهتمت بانتشار سرطان الثدي إلى العظام وعليه**

**الهدف الرئيسي- من هذه الدراسة هو تحديد انتشار سرطان**

**الثدي ومعرفة التوزيع الجغرافي باستخدام الماسحات**

التشخيصية وبالأخص المسح الذري للعظام باستخدام النظائر

المشعة بقسم الطب النووي في صنعاء في الفترة من يناير

2010 الي يونيو 2011 . تم جمع البيانات من 50 مريض

يعانون من سرطان الثدي تم حقنهم بالتكنيشيوم المشع مع

المادة الصيدلانية إل آم دي بي عن طريق الأوردة وأخذت

البيانات بجهاز إجاما كاميرا أظهرت نتائج الدراسة إن أكثر

الأماكن انتشارا من سرطان الثدي في الهيكل العظمي هي

الصدر, العمود الفقري, الاضلاع, الجمجمة ,والأطراف العليا

والسفلي وأماكن أخرى (الكبد والرئتين) بنسبة 19%, (5.2%,

12.1%, 10.3%), 12.1%, 13.8%, 8.6%, 12.1% و 6.9%

بينما الانتشار للصدر والعمود الفقري هما الشائع من انتشار

سرطان الثدي للهيكل العظمي , كما أوضحت أن حدوث

سرطان الثدي يرتبط خطيا مع العمر.

## List of content

Subject	Page
	<b>N0</b>
Dedication	i.
Acknowledgement	ii.
Abstract (EN)	iii.
Abstract (AB)	iv.
Table of Content	v.
List of Figures	vi.
List of Abbreviations	vii.
Introduction	1
Chapter One	7
1.1 Anatomy	7
1.2 Physiology	10
1.3 Pathology	11
1.4 Bone Metastasis	19
1.5 Problem of The Study	28
1.6 Objective Of The Study	28
1.7 Importance Of The Study	28
1.8 Overview Of The Study	29
Chapter Two	30

<b>Literature review</b>	<b>30</b>
<b>Chapter Three</b>	<b>45</b>
<b>3.1 Introduction</b>	<b>45</b>
<b>3.2 Study Area</b>	<b>45</b>
<b>3.3 Study Variable</b>	<b>45</b>
<b>3.4 Study Design</b>	<b>45</b>
<b>3.5 Study Sample</b>	<b>45</b>
<b>3.6 Method Of The Study</b>	<b>45</b>
<b>3.7Material Of The Study</b>	<b>46</b>
<b>3.7.1 Dose Calibrator</b>	<b>46</b>
<b>3.7.2 SPECT</b>	<b>48</b>
<b>3.8 Analysis Of The Data</b>	<b>50</b>
<b>Chapter Four</b>	<b>51</b>
<b>Result And Discussion</b>	<b>51</b>
<b>Chapter Five</b>	<b>56</b>
<b>5.1 Conclusion</b>	<b>56</b>
<b>5.2 Recommendation</b>	
<b>References</b>	
<b>Appendices</b>	

## **List of figures**

<b>Figure</b>	<b>Page</b>
	<b>No</b>
Figure (4_1): shows the frequency of breast cancer in big Yemen states.	51
Figure (4-2): shows the anatomical sites for breast cancer metastasis in skeletal system.	52



**Figure (4-3): shows the common histological pattern of breast cancer in biopsy finding. 53**

**Figure (4-4): shows the distribution of breast cancer histopathological type in Yemenis states. 53**

**Figure (4-5): shows the relation between breast cancer incidence and age. 54**

**Figure (4-6): show accuracy &sensitivity and specificity 55**

## **List of abbreviations:**

<b>Abbreviation</b>	<b>Meaning</b>
<b>BRCA1</b>	
<b>BRCA2</b>	
<b>NOCS</b>	<b>National Oncology Centre of Sanaa</b>
<b>C V</b>	<b>Cervical Vertebra</b>
<b>TH.V</b>	<b>Thoracic vertebra</b>
<b>L.V</b>	<b>Lumber vertebra</b>
<b>CH</b>	<b>Chest (ribs &amp; axilla)</b>
<b>SK</b>	<b>Skull</b>
<b>Pel</b>	<b>Pelvis</b>
<b>Up.ex</b>	<b>Upper extremities</b>
<b>Lw.ex</b>	<b>Lowe extremities</b>
<b>Lug+liv</b>	<b>Lung + Liver</b>

**Inv,lob**  
**Inv.duct**  
**IMCa**  
**FSA**  
**Aden.Ca**  
**FN**  
**MDP**  
**PRL**  
**MRI**  
**PET**  
**TNM**

**SPECT**  
**FNAC**  
**Th V**  
**NM**  
**NSAIDs**  
**PFS**  
**DFS**  
**ER**  
**PR**  
**HR**  
**MUGA**  
**(EKG)**  
**SGH**

**Invasive lobular carcinoma**  
**Invasive ductal carcinoma**  
**Invasive mammary carcinoma**  
**Fibro-cystic adenoma**  
**Adeno carcinoma**  
**Follicle adenoma**  
**Methylene diphosphonate**  
**Prolactin**  
**Magnetic Resonance Image**  
**Positron Emission Tomography**  
**Size of the tumor, Tumor spread to the**

**lymph nodes, Tumor metastasized**  
**Single Photon Computed Tomography**  
**Fine Needle Aspiration**  
**Thoracic Vertebrae**  
**Nuclear medicine**  
**Non-steroidal anti-inflammatory agents**  
**Progression-free survival**  
**Disease-free survival**  
**Estrogen receptor**  
**Progesterone receptor**  
**Hazard Ratio**  
**Multigated acquisitions**  
**Electrocardiogram**  
**Saudi German Hospitals Group**