



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكرو فيلم

# بسم الله الرحمن الرحيم



**HANAA ALY**



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# شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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التوثيق الإلكتروني والميكروفيلم

# جامعة عين شمس

## التوثيق الإلكتروني والميكروفيلم

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# **Use of PET/CT in Diagnosis and Staging of Malignant Pleural Mesothelioma**

*Thesis*

*Submitted for Partial Fulfillment of Master Degree  
In Radiodiagnosis*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سببنا انك لا تعلم لنا  
إلا ما علمتنا إنك أنت  
العليم العظيم

صدق الله العظيم

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# *List of Abbreviations*

<b>Abb.</b>	<b>Full term</b>
<i>18 FFDG</i>	<i>18 fluoro-2-deoxy glucose</i>
<i>ADC</i>	<i>Apparent diffusion coefficient</i>
<i>BAP1</i>	<i>1-associated protein 1</i>
<i>BTS</i>	<i>British thoracic society</i>
<i>CE.CT</i>	<i>Contrast enhanced computed tomography</i>
<i>CTA-4</i>	<i>Cytotoxic T- lymphocyte antigen 4</i>
<i>CT-AC</i>	<i>Computed tomography attenuation correction</i>
<i>DNA</i>	<i>Deoxy ribo nucleic acid</i>
<i>DWI</i>	<i>Diffusion weight image</i>
<i>EPP</i>	<i>Extra pleural pneumonectomy</i>
<i>ER</i>	<i>Endoplasmic reticulum</i>
<i>G-CSF</i>	<i>Granulocyte-colony stimulating factor</i>
<i>GLUT</i>	<i>Glucose transporter</i>
<i>IASLC</i>	<i>International association for the study lung of lung cancer</i>
<i>KEV</i>	<i>Kilo electron volt</i>
<i>MBQ</i>	<i>Mega Becquerel ( unit of radio activity )</i>
<i>MPM</i>	<i>Malignant pleural mesothelioma</i>
<i>MRI</i>	<i>Magnetic resonance imaging</i>
<i>MTAP</i>	<i>Methyl thioadenisine phosphorylase</i>
<i>NF-KB</i>	<i>Nuclear factor kappa light chain enhancer of activated B cells</i>
<i>OSEM</i>	<i>Ordered subsets-expectations maximization</i>

## *List of Abbreviations (Cont...)*

<b>Abb.</b>	<b>Full term</b>
<i>P/D: .....</i>	<i>Pleurectomy / decortiation</i>
<i>P16CDKN2A: ....</i>	<i>Protein 16 cyclin-dependant kinase inhibitor</i>
<i>PD-1: .....</i>	<i>Programmed cell death protein</i>
<i>PD-L1: .....</i>	<i>Programmed cell death ligand</i>
<i>PET/CT: .....</i>	<i>Positron emission tomography / computed tomography</i>
<i>RT:.....</i>	<i>Radiation therapy</i>
<i>SFTA: .....</i>	<i>Solitary fibros tumor of pleural</i>
<i>SUV: .....</i>	<i>Standardized uptake value</i>
<i>SV40: .....</i>	<i>Simian virus 40</i>
<i>TNF: .....</i>	<i>Tumor necrotic factor</i>
<i>TNM: .....</i>	<i>Tumor-node-metastasis</i>
<i>UK: .....</i>	<i>United kingdom</i>
<i>USA: .....</i>	<i>United states of America</i>
<i>VATS: .....</i>	<i>Video-ussisted thoracoscopic surhery</i>



## INTRODUCTION

**M**alignant pleural mesothelioma (MPM) is the most common primary malignancy of the pleura. MPM arises from mesothelial cells that cover the lung and chest wall and is strongly associated with asbestos exposure, with latency periods ranging from 20 to 50 years (*Kitajima et al., 2016*).

The most common pleural malignancy is pleural metastases, which can be difficult to differentiate from MPM. The differential diagnosis for MPM includes pleural metastases, solitary fibrous tumor of the pleura, epithelioid hemangioendothelioma, and metastatic dissemination of thymoma.

The association with asbestos exposure explains the predominance of MPM in men with men to women ratio of 4:1 with a median age between 50 and 70 years old. The median survival for a patient with MPM is between 4 to 18 months with predictors of poor prognosis including male gender, poor performance status and nonepithelioid histology (*Odisio et al., 2017*).

The majority of patients with MPM are symptomatic at diagnosis usually presenting with chest pain and shortness of breath. Additional clinical symptoms may include cough, malaise and weight loss.