

**Assessment of Quality of Life in Patients with  
Locally Advanced Head and Neck Cancer  
Patients Who Received Concurrent  
Chemoradiotherapy**

Thesis

*Submitted for Partial Fulfillment of Master Degree in  
Clinical Oncology and Nuclear Medicine*

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2019

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

لسببائك لا علم لنا  
إلا ما علمتنا إنك أنت  
العليم العظيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

# Acknowledgment

*First and foremost, I feel always indebted to **Allah**, the Most Kind and Most Merciful.*

*I'd like to express my respectful thanks and profound gratitude to **Prof. Dr. Hatem Mohamed Abdallah**, Professor of Clinical Oncology and Nuclear Medicine, Faculty of Medicine, Ain Shams University, for his keen guidance, kind supervision, valuable advice and continuous encouragement, which made possible the completion of this work.*

*I am also delighted to express my deepest gratitude and thanks to **Ass. Prof. Dr. Amr Lotfy Farag**, Assistant Professor of Clinical Oncology and Nuclear Medicine, Faculty of Medicine, Ain Shams University, for his kind care, continuous supervision, valuable instructions, constant help and great assistance throughout this work.*

*I am deeply thankful to **Dr. Doaa Atef Mohamed**, Lecturer of Clinical Oncology and Nuclear Medicine, Faculty of Medicine, Ain Shams University, for her great help, active participation and guidance.*

*I would like to express my hearty thanks to all **my family** for their support till this work was completed.*

*Last but not least my sincere thanks and appreciation to all patients participated in this study.*

**Marwa Abdelrasoul Zaied**

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## *List of Abbreviations*

<b>Abb.</b>	<b>Full term</b>
<i>3D</i> .....	<i>Three-Dimensional</i>
<i>Ab</i> .....	<i>Antibody</i>
<i>AFRT</i> .....	<i>Altered Fractionation Radiotherapy</i>
<i>Ag</i> .....	<i>Antigen</i>
<i>APM</i> .....	<i>Antigen Processing Machinery</i>
<i>ART</i> .....	<i>Adaptive RT</i>
<i>AS</i> .....	<i>Age-Standardized</i>
<i>BMI</i> .....	<i>Body Mass Index</i>
<i>CRT</i> .....	<i>Chemoradiotherapy</i>
<i>CT</i> .....	<i>Computed Tomography</i>
<i>CTLA-4</i> .....	<i>Cytotoxic T-Lymphocyte Antigen 4</i>
<i>EN</i> .....	<i>Enteral Nutrition</i>
<i>FDA</i> .....	<i>Food and Drug Administration</i>
<i>FDG-PET</i> .....	<i>Fluoro-2-Deoxy-D-Glucose Positron Emission Tomography</i>
<i>HNC</i> .....	<i>Head and Neck Cancer</i>
<i>HRQOL</i> .....	<i>Health-Related Quality of Life</i>
<i>IC</i> .....	<i>Induction Chemotherapy</i>
<i>IFN</i> .....	<i>Involving Interferon</i>
<i>IGRT</i> .....	<i>Image-Guided RT</i>
<i>IMRT</i> .....	<i>Intensity-Modulated RT</i>
<i>INHANCE</i> .....	<i>International Head and Neck Cancer Epidemiology</i>
<i>IRF9</i> .....	<i>IFN Receptor 9</i>
<i>ISGs</i> .....	<i>IFN-Stimulated Genes</i>
<i>LAHNC</i> .....	<i>Locally Advanced Head and Neck Cancer</i>
<i>LRC</i> .....	<i>Locoregional Control</i>
<i>MACH-NC</i> .....	<i>Meta-Analysis of Chemotherapy in Head and Neck Cancer</i>

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

<b>Abb.</b>	<b>Full term</b>
<i>MRI</i> .....	<i>Magnetic Resonance Imaging</i>
<i>MU</i> .....	<i>Monitor Unit</i>
<i>NPC</i> .....	<i>Nasopharyngeal Carcinoma</i>
<i>ORN</i> .....	<i>Osteoradionecrosis</i>
<i>OS</i> .....	<i>Overall Survival</i>
<i>QoL</i> .....	<i>Quality of Life</i>
<i>R/M</i> .....	<i>Recurrent / Metastatic</i>
<i>RD</i> .....	<i>Registered Dietitian</i>
<i>RR</i> .....	<i>Response Rate</i>
<i>RT</i> .....	<i>Radiotherapy</i>
<i>RTOG</i> .....	<i>Radiation Therapy Oncology Group</i>
<i>SCCHN</i> .....	<i>Squamous Cell Carcinoma of the Head-And- Neck</i>
<i>SCCHN</i> .....	<i>Surfaces of the Head and Neck</i>
<i>SD</i> .....	<i>Standard Deviation</i>
<i>TIL</i> .....	<i>Tumor Infiltration</i>
<i>VMAT</i> .....	<i>Volumetric Intensity-Modulated Arc Therapy</i>
<i>X<sup>2</sup></i> .....	<i>Chi-Square test</i>

## INTRODUCTION

**H**ead and neck cancer (HNC), an umbrella term for malignancies of larynx and hypopharynx, nasal cavity, paranasal sinuses, nasopharynx, oropharynx, oral cavity, and salivary gland, accounts for about half a million cases annually, ranking it as the sixth most common cancer globally (*Jemal et al., 2016*).

About 90% of HNCs are squamous cell carcinomas arising from the epithelium in the region of head and neck after exposure to carcinogens, such as tobacco smoking (*Siegel et al., 2016*).

Locally advanced head and neck cancer is defined generally as (stage group III, IVA, IVB) tumors, according to the AJCC TNM staging system “unresectable” tumors are typically those that cannot be surgically removed without causing unacceptable morbidity, such as tumors with dense involvement of the cervical vertebrae, brachial plexus, deep muscles of the neck, base of skull (*Edge et al., 2010*).

In patients with locally advanced head and neck cancer (LAHNC), both disease and treatment have a great impact on quality of life (QOL). Standard treatment for these patients is concomitant chemoradiotherapy, which induces severe acute and late toxicities. Common acute toxicities of chemoradiotherapy include mucositis, dermatitis, dysphagia,

ototoxicity, and neuropathy (*Mehanna et al., 2010*). Late toxicity may consist of dysphagia sometimes with aspiration, odynophagia, xerostomia, fibrosis, and occasionally osteoradionecrosis. These toxicities negatively influence the QOL (*Rutten et al., 2011*).

## **AIM OF THE WORK**

- 1- Measure the HR QoL in locally advanced head and neck cancer patients.
- 2- Assess the relation between concurrent chemoradiotherapy treatment and quality of life in those patients, an important survival outcome that can guide healthcare professionals to tailor treatment and rehabilitation according to expected functional outcomes.