

CONTENTS

List of tables.	I
List of figures.	II
List of abbreviations.	III
Introduction.	1
Aim of the work.	2
 Review of literature:	 3
1. Chapter One: Definition of H1N1 virus.	3
2. Chapter Two: Epidemiology of H1N1 virus.	7
-Historical perspective.	7
-Epidemiology of the 2009-2010 Pandemic.	8
-Transmission.	11
-Incubation period.	12
-Viral shedding.	13
-Morbidity and Mortality.	15
-Risk groups.	18
3. Chapter Three: Virology of H1N1.	23
-Influenza subtypes.	23
-Genetic and antigenic characterization.	23
-Tropism.	25
4. Chapter Four: Pathogenesis of H1N1 virus.	26
-Pathogenesis.	26
-Pathology.	28
5. Chapter Five: Clinical picture of H1N1 virus.	29
-Case definitions.	29
-Clinical manifestations.	30
-Complications.	33
-Laboratory findings.	36
-Imaging.	37
-Predictors of outcome .	37
6. Chapter Six: Diagnosis of H1N1 virus.	38
-Diagnostic assays.	38
-Approach to diagnosis.	40
-Choice of diagnostic test assay.	41

7. Chapter Seven: Treatment of H1N1 virus.	43
-Treatment guideline committees.	45
-Who should be treated?	47
-Efficacy of antiviral therapy.	49
-Timing of antiviral therapy.	50
-Available agents.	51
-Drug resistance.	53
-Treatment during pregnancy.	55
-Treatment of children.	56
-Dosing of antiviral therapy.	57
-Drug administration.	60
-Duration of antiviral therapy.	60
-Adverse effects of antiviral therapy.	60
-Investigational therapies.	61
-Antibacterial therapy.	62
8. Chapter Eight: Prevention and Control of H1N1.	63
-Prevention.	63
-Infection control.	63
-WHO recommendations.	64
-Types of vaccine.	66
-Adverse events of vaccine.	67
-Availability of the vaccine.	69
Patient and Methods.	72
Results.	78
Discussion.	95
Summary and Conclusions.	107
Recommendations.	110
References.	111
Arabic Summary	

LIST OF TABLES

No	Title	page
Table 1	S0FA score assessment.	75
Table 2	Case fatality rate of H1N1 cases.	79
Table 3	Study of gender difference in association with mortality.	80
Table 4	Study of age difference in association with mortality.	81
Table 5	Comparison of the clinical criteria for survivors versus non survivors among H1N1 cases.	82
Table 6	Comparison of comorbidities for survivors versus non survivors among H1N1 cases.	84
Table 7	Comparison of laboratory data for survivors versus non survivors.	85
Table 8	Blood gases and electrolytes for 142 patients.	87
Table 9	Comparison of the scores for survivors versus non survivors among H1N1 cases.	89
Table 10	The ROC curve for APACHE II score in relation to mortality.	90
Table 11	The ROC curve for SOFA score in relation to mortality.	92
Table 12	Multivariate Logistic Regression analysis for mortality.	94

LIST OF FIGURES

No	Title	page
Fig. 1	Examples of antigenic shift and antigenic drift.	6
Fig.2	Mortality chart.	79
Fig.3	Difference between gender and mortality.	80
Fig. 4	ROC curve testing the ability of APACHE II score to predict mortality.	90
Fig. 5	Relation between APACHE II score and mortality.	91
Fig. 6	ROC curve testing the ability of SOFA score to predict mortality.	92
Fig. 7	Relation between SOFA score and mortality.	93

LIST OF ABBREVIATIONS

H1N1	H1 (hemagglutinin type 1) and N1 (neuraminidase type1)
WHO	World Health Organization
CDC	Centers for Disease Control and Prevention
(rRT)-PCR	real-time reverse transcriptase-PCR
TIV	trivalent inactivated vaccine
LAIV	live attenuated influenza vaccine
GBS	Guillain-Barré syndrome
NHS	National Health Service
APACHE II score	Acute Physiology and Chronic Health Evaluation II score
SOFA score	Sequential Organ Failure Assessment score
MAP	Mean Arterial Pressure
dop	dopamine
dob	dobutrex
epi	epinephrine
nor epi	nor epinephrine
Roc curve	Receiver operating characteristic curve