

# **The Impact of Clinical Pharmacist Managed Anticoagulation Management Service Versus Routine Medical Care on the Clinical Outcome of Atrial Fibrillation Patients**

**Thesis submitted for the fulfillment of master degree in pharmaceutical sciences**

**"Clinical pharmacy"**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

"الرَّحْمَنُ \* عَلَّمَ الْقُرْآنَ \* خَلَقَ

الْإِنْسَانَ \* عَلَّمَهُ الْبَيَانَ" (١-٤) الرحمن

صدق الله العظيم






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# *Dedication*

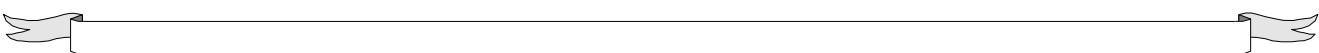
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*List of abbreviations*

<b><i>Abbreviation</i></b>	<b><i>Stands for</i></b>
<b><i>ACCP</i></b>	American Collage of Chest Physicians
<b><i>ACE</i></b>	AntiCoagulation Europe
<b><i>ADRs</i></b>	Adverse Drug Reactions
<b><i>AF</i></b>	Atrial Fibrillation
<b><i>AKA</i></b>	Anticoagulation Knowledge Assessment questionnaire
<b><i>ALT</i></b>	Alanine Transaminase
<b><i>AMS</i></b>	Anticoagulation Management Service
<b><i>ANOVA</i></b>	Analysis Of Variance
<b><i>AST</i></b>	Aspartate AminoTransferase
<b><i>ASUHs</i></b>	Ain Shams University Hospitals
<b><i>CAD</i></b>	Coronary Artery Disease
<b><i>CBC</i></b>	Complete Blood Count
<b><i>CTCAE</i></b>	Common terminology criteria for adverse events
<b><i>CYP</i></b>	Cytochrome-P
<b><i>DCC</i></b>	Direct Current Cardioversion
<b><i>DDIs</i></b>	Drug-Drug Interactions
<b><i>DM</i></b>	Diabetes Mellitus
<b><i>DVT</i></b>	Deep Venous Thrombosis
<b><i>ECG</i></b>	Electro Cardio Graph
<b><i>EHRA</i></b>	European Heart Rhythm Association
<b><i>ESC</i></b>	The European Society of Cardiology
<b><i>FDA</i></b>	Food Drug Administration
<b><i>GIT</i></b>	Gastrointestinal tract
<b><i>HIT</i></b>	Heparin Induced Thrombocytopenia
<b><i>Hgb</i></b>	Hemoglobin
<b><i>INR</i></b>	International Normalized Ratio
<b><i>ISI</i></b>	International Sensitivity Index
<b><i>IV</i></b>	Intravenous

*List of abbreviations*

<b><i>Abbreviation</i></b>	<b><i>Stands for</i></b>
<b><i>Kg</i></b>	Kilogram
<b><i>L</i></b>	Liter
<b><i>LMWHs</i></b>	Low Molecular Weight Heparins
<b><i>LV</i></b>	Left ventricular
<b><i>mg</i></b>	Milligram
<b><i>MI</i></b>	Myocardial Infarction
<b><i>ml/min</i></b>	Milliliter per minute
<b><i>NSAID</i></b>	Non Steroidal Anti Inflammatory Drug
<b><i>OAC</i></b>	Oral Anticoagulant
<b><i>PE</i></b>	Pulmonary Embolism
<b><i>PT</i></b>	Prothrombin Time
<b><i>RBCs</i></b>	Red Blood Cells
<b><i>SD</i></b>	Standard Deviation
<b><i>S.Es</i></b>	Side effects
<b><i>SPSS</i></b>	Statistical Package for Social Sciences
<b><i>S.Cr</i></b>	Serum Creatinine
<b><i>TTR</i></b>	Time in Therapeutic INR Range
<b><i>USA,US</i></b>	United States of America
<b><i>VKAs</i></b>	Vitamin K Antagonists
<b><i>VKOR</i></b>	Vitamin K Epoxide Reductase
<b><i>VTE</i></b>	Venous Thrombo Embolism
<b><i>WHO</i></b>	World Health Organization
<b><i>WHO ERC</i></b>	World health organization Research Ethics Review Committee
<b><i>Yrs</i></b>	Years



### **Abstract:**

**Objectives:** To assess impact of pharmacist managed anticoagulation management service on Egyptian atrial fibrillation patients' anticoagulation management, incidence of bleeding events and thromboembolic events, incidence of warfarin drug and food interactions. **Patients and methods:** Prospective, randomized, controlled study comparing 30 atrial fibrillation patients who received routine medical care, with 30 atrial fibrillation patients subjected to clinical pharmacist managed anticoagulation management service. Follow up was done continuously for 6 months. The principal safety outcomes were percentage time in therapeutic range (%TTR), anticoagulation knowledge assessment questionnaire (AKA), major bleeding or thromboembolic events, adverse drug reactions (ADRs) and warfarin-drug interactions (DI). **Results:** study group's TTR levels were significantly ( $p < 0.001$ ) higher as compared to control group. The patients' AKA scores were significantly ( $p < 0.001$ ) increased in study group compared to control group. Study group had a significantly lower frequency of bleeding ( $p < 0.001$ ) and no significant difference in thromboembolic ( $p = 0.154$ ) or nonspecific episodes ( $p = 0.303$ ) versus control group, Study group had a significantly lower frequency of warfarin drug interactions ( $p = 0.004$ ) and no significant difference in frequency of warfarin food interaction ( $p = 0.17$ ) versus control group. **Conclusion:** Pharmacist managed anticoagulation management service improved patients' INR control, frequency of acute complication and of warfarin drug interactions and patients' level of anticoagulation education.