INSULIN THERAPY IN PATIENTS WITH DIABETES MELLITUS IN CLINICAL TRAINING CENTER SUNGAI BULOH

DIPLOMA IN PHARMACY

FACULTY OF PHARMACY

UNIVERSITI TEKNOLOGI MARA

PULAU PINANG

PREPARED BY

WAN SURAYA BINTI WAN NAZAHAR

NADIATUL HUSNA BINTI ANIS

MARCH 2018

ACKNOWLEDGEMENT

First and foremost, we would like to express our thanks to God because of His love and strength that He has given to us to finish our internship report. The internship opportunity we had with Department of Pharmacy Clinical Training Center (CTC) Sungai Buloh was a great chance for learning and gaining professional development. Therefore, we consider ourselves as a group of very lucky individuals as we were given the opportunity to be a part of it. We were also grateful for having a chance to meet so many wonderful and helpful professional staffs who led us though this internship period.

Bearing in mind previous, we use this opportunity to express our deepest gratitude and special thanks to our supervisor Encik Nur Azmi Bin Badarulzaman, who in spite of being extraordinary busy with his duties, took time out to hear, guide and allowed us to carry out our project at their esteemed organization during the training. We also want to express our deepest thanks to our supervisor Dr. Lean Qi Ying, lecturers Madam Che Noriah Othman and Madam Nur Syuhada Azzman and other lecturers from Faculty of Pharmacy in Pulau Pinang and Puncak Alam for their advices and opinions about our research.

It is our radiant sentiment to place on our best regards, deepest sense of gratitude to all pharmacists and pharmacy assistants in CTC Sungai Buloh for their careful and precious guidance which were extremely valuable for our study both theoretically and practically.

Lastly, our thanks and appreciations also go to our family members and colleague in developing the project and also people who have willingly helped us out with their abilities. We perceived this opportunity as a big milestone in our career development.

TABLE OF CONTENTS

ACKNOWLEDGEMENT I

LIST OF TABLES IV

ABSTRACT V

1. INTRODUCTION 1

   1.1. PROBLEM STATEMENT 3

   1.2. SIGNIFICANCE OF STUDY 4

2. LITERATURE REVIEW 5

3. AIM AND OBJECTIVES 8

4. MATERIALS AND METHODS 9

   4.1. STUDY DESIGN 9

   4.2. STUDY SUBJECT 10

   4.3. DATA COLLECTION 11

   4.4. DATA ANALYSIS 12

5. RESULTS 13

   5.1. PATIENTS' DEMOGRAPHIC FACTORS 13

   5.2. CLINICAL CHARACTERISTICS 15

   5.3. INSULIN THERAPY IN PATIENTS 17

ABSTRACT

Introduction: Diabetes is highly prevalent, afflicting approximately 150 million people worldwide and this number is expected to rise to 300 million in the year 2025. It has been acknowledged that patients with diabetes are prone to substantial regimen adherence problems. It stresses the need for constant motivation and one to one level education at frequent intervals to ensure better compliance to the treatment of diabetes mellitus (DM). The goals of diabetes treatment are controlling blood glucose level as normal as possible while preventing from long-term complications. Millions of people with diabetes use insulin alone or in combinations with oral hypoglycemic agents. In spite of the advantages of insulin therapy, many barriers exist that lead to poor adherence with insulin.

Objective: The purpose of this study was to assess the patients' adherence and identify the barriers of insulin use among diabetic patients at Clinical Training Center Sungai Buloh.

Methods: This cross-sectional study has been conducted on 100 patients with DM who were on insulin therapy over 6 months using convenience sampling method. The data collection was carried out using structured questionnaire from UNIMEDS, an online heath care information system for 2 months. The data were analysed using SPSS version 21.

Results: A total of 100 patients with type 2 diabetes participate in the survey. The mean age of patients was 58.9 ± 9.4 years old. A bare majority of 53.0% patients had BMI under the obese category. More than half (63.0%) of the patients were hypertensive. The mean of duration of DM was put in as months and so, when converted into years (for easy understanding), the mean of duration of DM was 11.8 years (12 years) and the mean for duration of insulin regimen was 4.1 years (4 years). The mean of patients' HbA1c and fasting blood sugar level were respectively 8.9

CHAPTER 1

1. INTRODUCTION

Diabetes Mellitus is a metabolic disorder resulting from a deficiency in insulin secretion, insulin action or both. By the year 2010, it has become the universal endocrine disorder. It is estimated that more than 200 million people worldwide will have DM and 300 million will subsequently have the disease by 2025 while World Health Organization estimates that more than 346 million people worldwide have DM (Shrivastava, Shrivastava, & Ramasamy, 2013).

Globally, diabetes turns out to be a crucially growing health problem and it is also an essential problem in Africa. It is a chronic disease that needs long term medical care and follow-up to prevent complications associated with the disease (Gerada, Mengistu, Demessie, Fantahun, & Gebrekirstos, 2017). The chronic hyperglycemia of diabetes is related with long-term damage, dysfunction and failure of different organs, especially the eyes, kidneys, nerves, heart and blood vessel (Of & Mellitus, 2014). The occurrence of atherosclerotic cardiovascular, peripheral arterial, cerebrovascular disease, hypertension and abnormalities of lipoprotein metabolism usually increased in patient with long-term complications of diabetes (Of & Mellitus, 2014).

Adherence to treatment significantly influences the prevention and control of acute and long-term complications of Diabetes Mellitus (Gerada et al., 2017). A recent review identified factors associated with adherence to any diabetes medication (Mark Peyrot, Rubin, Kruger, & Travis, 2010). These factors include medication costs, regimen complexity, the patient's emotional well-being, and the patient's perceptions of medication side effects and medication-related interference with activities of daily living (Mark Peyrot et al., 2010). The main goal treatment of diabetes is to control the blood glucose levels as normal as possible with less