

## OA-D-09

### SURVEY OF SMARTPHONE APPLICATION USAGE FOR DIABETES MANAGEMENT IN TYPE-2 DIABETES MELLITUS PATIENTS IN RSUPN DR. CIPTO MANGUNKUSUMO JAKARTA

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#### INTRODUCTION

The rapid development of smartphone technology nowadays has enabled a new way of diabetes self-empowerment through the smartphone application usage. This study is aimed to obtain an overview of how smartphone and smartphone applications are used for diabetes management among Type-2 Diabetes Mellitus (T2DM) patients in RSUPN Dr. Cipto Mangunkusumo Jakarta (RSCM), a tertiary care and a national referral hospital in Indonesia.

#### METHODOLOGY

This cross-sectional study was conducted in the Integrated Diabetic Clinic RSCM during the 2<sup>nd</sup>-to-3<sup>rd</sup> week of May 2019 by using a short questionnaire, of which assessed the level of smartphone ownership and smartphone application usage for diabetes management.

#### RESULTS

Thirty-one respondents participated in this study. The average age was 59 years-old and most of them were either retired (13/31, 41.9%) or not working (13/31, 41.9%). Only 11 respondents had a higher degree of education. While most of the respondents (18/31, 58.1%) had a basic monthly income <1 million IDR (60 USD), majority of respondents (27/31, 87.1%) had a smartphone, of which all of them were using Android. Only one respondent used it for diabetes management, while most of them used it only for standard communication purpose. This was due to the lack of information on available diabetes application.

#### CONCLUSION

The use of smartphone among T2DM patients in our tertiary care hospital was high despite their low socioeconomic status. However, the smartphone application usage for diabetes management was very low, necessitating the need of information dissemination related to the potential benefit of diabetes application to all T2DM patients.

#### KEY WORDS

smartphone, diabetes application, type 2 diabetes mellitus, self-management

## OA-D-10

### BACTERIA PATTERN OF URINE CULTURE FROM PATIENTS WITH DIABETES AT DR RAMELAN NAVY HOSPITAL SURABAYA, INDONESIA

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#### INTRODUCTION

The presence of a bacteria pattern that is thought to be the cause of the infection is essential for the basis of empirical and definitive antibiotic treatment. The study aimed to find the bacteria pattern of urine culture from patients with diabetes.

#### METHODOLOGY

This was a descriptive, cross-sectional study. The sample was pus obtained from the 3<sup>rd</sup> grade of patients with diabetic foot who had clear signs of infection, and were hospitalized at Dr. Ramelan Navy Hospital in the period of 2016 to 2018 (3 years). Pus was taken before antibiotic administration, and the culture was done in the microbiology laboratory.

#### RESULTS

The number of pus samples collected was 1571 samples. Isolates that have bacterial growth and can be identified were 1328 samples (84.53%). Bacterial isolates found as the most common cause were *Escherichia coli* 17.17% (228). The second most prevalent bacterial isolates were *Staphylococcus aureus* (157 isolates). While the third rank in 2016, 2017 and 2018 were *Burkholderie pseudomallei* (35 isolates), *Klebsiella pneumonia* (39 isolates) and *P. aureginosa* (50 isolates) respectively. Meropenem and Piperacillin were found as the sensitive antibiotics in these patients in 2016. While no antibiotic was sensitive for *E. coli*, but meropenem, piperacillin and vancomycin were found sensitive for *S. aureus* and others in 2017. In 2018, *E. coli* was found sensitive to Amikacin and Meropenem, whereas other types of bacteria were resistant to antibiotics examined.

**CONCLUSION**

It was found that the most prevalent bacteria that cause diabetic foot infections in patients with diabetes mellitus were *Escherichia coli*.

**KEY WORDS**

diabetic foot, isolate, diabetes mellitus

**OA-D-11****CORRELATION BETWEEN NEUTROPHIL-LYMPHOCYTE RATIO WITH GLUCOSE CONTROL IN T2DM PATIENTS**

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**INTRODUCTION**

Elevated levels of systemic inflammatory markers are associated with cardiovascular disease (CVD). Neutrophil-Lymphocyte Ratio (NLR) is a widely available, easily derived, inexpensive and reproducible marker of inflammation. The NLR can also be affected by atherosclerotic risk factors, such as diabetes. There is no sufficient data about correlation between NLR and glycosylated haemoglobin (HbA1c). The aim of the present study was to investigate the correlation between NLR with HbA1c in T2DM patients.

**METHODOLOGY**

This study was cross-sectional observational design performed at Surabaya tertiary hospital between March until April 2019. Patients who fulfilled the criteria of inclusion and exclusion got their blood pressure, complete blood count, neutrophil, lymphocyte counts, plasma glucose, serum glycosylated hemoglobin, serum creatinine, and plasma albumin measured. Data were statistically analyzed using Pearson Correlation test.

**RESULTS**

We enrolled 30 hospitalized T2DM patients consisting of 17 (56.7%) men and 13 (43.3%) women with average age was 54.7 years old (31-74 years old). The mean of systolic blood pressure was 126±17.5 mmHg and diastolic blood pressure was 79,3±9.4 mmHg. The overall mean Hb, WBC and PLT were 9.87±1.7 g/dL, 19,236±6,866.4/ mm<sup>3</sup> and 399,133±155,125.9/ mm<sup>3</sup> respectively, while NLR was 15.01±5.9, random blood glucose 353.73±157.2 mg/dL, HbA1c 9.88±1.9%, and eGFR 62.37±32.4 mL/min/1.73 m<sup>2</sup>. Statistical analysis showed that there was significance correlation between NLR with HbA1c in T2DM patients in this study ( $p=0.07$ ;  $r=0.48$ ).

**CONCLUSION**

We concluded that there was significance correlation between NLR and HbA1c in T2DM patients in this study.

**KEY WORDS**

Neutrophyl-lymphocyte Ratio, Glycosylated Haemoglobin, NLR, HbA1c, T2DM

**OA-D-12****DIABETIC FOOT INFECTION PROFILE, COMMON PATHOGEN AND ANTIBIOTIC SENSITIVITY**

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**INTRODUCTION**

Foot infections are the major complications of diabetes mellitus and lead to the development of amputation. The aim of this study was to establish the biochemical and bacteriological profile of Diabetic foot ulcer (DFU).

**METHODOLOGY**

This was a cross-sectional observational study performed at Surabaya tertiary hospital. The DFU patients got measured their ABI, hematological, biochemical examination. The grading of DFU was carried out as per Wagner's system.

**RESULTS**

A total of 30 patients with DFU were included. 56.7% were males and 43.3% were females with average age of 54.7 years old. The mean WBC was 19,236±6,866.4/ mm<sup>3</sup>, mean HbA1c was 9.88±1.9% and mean eGFR was 62.37±32.4 mL/min/1.73 m<sup>2</sup>. The 3rd grade ulcers and *Proteus Mirabilis* were the most predominant ulcers and pathogens respectively (36.7% and 30%). The culture results were 100% sensitive to amikacin, piperacillin-tazobactam, cefoperazone-sulbactam, and imipenem.

**CONCLUSION**

In this study, Wagner's grade 3 and *Proteus Mirabilis* were the most predominant ulcers and pathogens, respectively. Amikacin, piperacillin-tazobactam, cefoperazone-sulbactam, and imipenem were the most sensitive antibiotics.

**KEY WORDS**

diabetic foot infection, proteus mirabilis, antibiotics