

PREVALENCE OF ANGULAR CHEILITIS IN DIABETES MELLITUS PATIENT BASED ON A1C LEVEL AT HAJJ HOSPITAL SURABAYA 2017

Nurina Febriyanti Ayuningtyas^{1*}, Diah Savitri Ernawati¹, Bagus Soebadi¹, Fatma Yasmin Mahdani¹, Priyo Hadi¹, Rizki Amalia Indahsari² and Hendri Susanto³

¹Department of Oral Medicine, Faculty of Dental Medicine, Universitas Airlangga, Surabaya, Indonesia.

²Undergraduate Student Faculty of Dental Medicine, Universitas Airlangga, Surabaya, Indonesia.

³Resident of Oral Medicine Specialist Programme, Faculty of Dental Medicine, Universitas Airlangga, Surabaya, Indonesia.

*e-mail : nurina-ayu@fkg.unair.ac.id

(Received 21 March 2020, Revised 10 May 2020, Accepted 11 May 2020)

ABSTRACT : Diabetes mellitus is a metabolic disease characterized by hyperglycemia. Hyperglycemia can be determined by examining the A1c level, which is the examination of blood glucose that bound to Hb strongly and circulates with erythrocyte during the lifespan of erythrocyte. Patients with diabetes mellitus have been associated with various complications in oral cavity, one of which is angular cheilitis. Angular Cheilitis (AC) is extraoral lesion characterized with erythema, fissure, cracking, inflammation or ulceration at the corners of the mouth. Since AC is appeared extraorally, it may serve as an clinical sign indicating diabetes mellitus. Purpose is to discover the prevalence of AC based on A1c level in patients with diabetes mellitus. Descriptive observational study with cross-sectional total sampling on 41 patients. The prevalence of angular cheilitis found 7 (17.1%) cases lesion from 41 total sampling with all of cases found in patients with uncontrolled diabetes mellitus. In conclusion the prevalence of angular cheilitis all in uncontrolled diabetes mellitus patients with A1c level above 8%.

Key words : Diabetes mellitus, angular cheilitis, A1c level, candida.

INTRODUCTION

Diabetes mellitus (DM) is an endocrine disease that causes metabolic disorders, characterized by an increase in blood glucose levels that called hyperglycemia (Rezquita *et al*, 2020). Hyperglycemia may occur due to damage in pancreatic β cells or due to impaired insulin secretion by pancreatic β cells (Glick, 2015).

Increased prevalence rates of diabetes mellitus occur in all of the world (Suciadi *et al*, 2020). The number of people with diabetes mellitus in the world in 2016 reached 422 million peoples. Indonesia ranks fourth in number of people with diabetes mellitus in the world, after United States, India, and China (WHO, 2016). In 2007, the urban population in Indonesia with DM was 5.7%, with a proportion of 26.3% having been diagnosed before and the remaining 73.7% undiagnosed. Then research results in 2013 increased, to 6.9%, with the proportion of 30.4% have been diagnosed before and the remaining 69.6% undiagnosed (Kementerian Kesehatan, 2014).

Diagnose of diabetes mellitus can be established by blood glucose test results (WHO, 2016) The condition of hyperglycemia in people with diabetes mellitus can be established when the person has blood glucose levels

≥ 200 mg / dL or fasting blood glucose level ≥ 126 mg/dL. In addition, it also can be established by examination of A1c levels, which is more accurate test than blood glucose and fasting blood glucose because it can provide information about blood glucose levels last 2-3 months and not influenced short-term lifestyle patterns (Setiawan, 2011). A person in a normal condition of blood glucose if A1c $< 5.7\%$, prediabetes mellitus 5.7%-6.4% and in people with diabetes mellitus $> 6.5\%$. Diabetes mellitus is a disease that can spread throughout the body, such as the heart, blood vessels, kidneys, salivary gland and also the oral cavity (Narmada *et al*, 2019). There are various complications of diabetes mellitus in the oral cavity, one of which is angular cheilitis (WHO, 2016).

Angular cheilitis is an inflammatory reaction in the corner of the mouth that has characteristics of fissure, redness, crusting, discomfort, pain, and burning sensation (Glick, 2015). Based on research in Brazil, the prevalence of oral mucosa lesions in 51 patients diabetes mellitus type 1 and type 2 that is 78.4% with the average age is 64 years old. The prevalence of oral mucosa lesions in patients with diabetes mellitus include traumatic ulcer (25.5%), fissured tongue (11.7%), recurrent aphthous