The characteristic of patients with diabetes mellitus Type 2 in all community health centre, City of Kendari, southeast Sulawesi in 2016

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Abstract

Background: The prevalence of Type 2 diabetes mellitus (DM) is increasing. Type 2 DM accounts for as much as 90% of all cases of DM in Indonesia as well in Southeast Sulawesi Province. Most of the victims of DM come from the women with the distance of the age between 46 and 65 years. The prevalence of Type 2 DM increases with age, and it is more common in women than in men, so it needs to be characterized against patients with Type 2 diabetes such as age, gender, and complicated disease. **Purpose:** The purpose of this study is to find the characteristic to the patients of DM Type 2 in all city health centers, Kendari, in 2016. **Methods:** This study utilized the method of observation, data were taken through retrospective in 10 Puskesmas in KendResult of the study with the total of the sample was 600 (60 per community health centre) found that the distribution of the sufferer of DM Type 2 based on their age was found to the patient of women with the total (61%) and men (39%). The majority suffered DM Type 2 about 38.97% is old age 46 to 55 years, and the disease that accompanied was hypertension (28%). **Conclusion:** From the result of the study, the characteristic of patients with DM Type 2 in city health centers, Kendari, in 2016 was found that mostly to the patients of women aged ≥40 years, and hypertension was categorized as a comorbidity.

Key words: Characteristic, diabetes mellitus Type 2, health centers

BACKGROUND

The pattern of the disease in Indonesia had predicted, from infectious disease to a chronical annual disease like pola diabetes Mellitus (DM)**.** This is assumed that there is a strong correlation with the habit and the pattern of life in daily basic such as the pattern of daily diet and less of activity in physic.[1] According to the WHO in 2011, diabetes was ranked 9 causing the death in the world. The updated data in 2015 shown by Perkumpulan Endokrinologi (PERKENI) stated that the number of sufferer of DM in Indonesia increased from rank 7 to rank 5, while Southeast Sulawesi is placing in rank 5 from 10 most dangerous disease (DinkesSultra, 2015). Some research on health sector in Indonesia stated that the disease that mostly analyzed is stroke, hypertense, and heart attack, and one of them is DM.[2] The number of suffering from DM kept increasing as the improvement on the prevalence of DM. To find how big is the effect of risk factor on DM, the characterization of the patients is urgently conducted.

Characteristic of the patients with DM Type 2 comprised of age, gender, and the accompanied disease. Age is the most risky factor in causing the disease of DM, to the old person, the function of body's organ declined, causing the decrease of the function of endocrine pancreas in producing insulin. At the age of 41–64 had the chance in suffering 3, 3 times easier compared to the age of 25–40. It is because the decrease production of insulin by β pancreas cell related to increasing of age (Dipiro, 2008).[3] Besides, gender had became one of the major problems in the improvements of the disease of DM, and in general, the number of the improvements of the disease of DM Type 2 is varied among between male and female.[4] Based on the risk factor, women had a great

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chance caused by the increasing of a bigger body mass index. The cycle syndrome of menstruation (premenstrual syndrome), postmenopause that distributes the fat that was able to accumulate due to the process of those hormonal so as women risky to DM Type 2 (American Pharmacist Association, 2004).[5] On the other hand, accompanied disease could influence the quality of patients' life, among them are the quality from physically and daily basis, so it resulted in additional disease instead of DM and eventually affected the quality of patients' life (Faridah, 2016).

DM is kind of disease caused by the friction in the metabolism of glukosa due to the lack of insulin both absolutely and relatively, which could stimuli other kinds of clinically such as polidipsi, poliuri during the night time, poliphagi, and lost weight caused by the increasing of the level of glucose in the body (Riskesdas, 2013). The percentage of DM Type 2 was about 95% more than the whole population of the sufferer of DM aged above 45 years in general.

Puskesmas is the place for an access to health service for the community, and personally, for the first aid, the major concern is for the promotion and preventive efforts (Permenkes, 2014).[6] The function of Puskesmas is as the media of health service in the first level of the service, comprising of the service in health sector both public and personal.[1]

MATERIALS AND METHODS

The method of the study utilized was observational. Data were collected retrospectively. A sample of the study was the whole patients of DM Type 2 in all city health centers, Kendari, and registered in medical record that has fulfiled the criterion of inclusion and exclusion. Total sample were 600 included in the study.

RESULT AND DISCUSSION

Characteristic Based on the Classification of Gender

The study on the characteristic on patients in terms of gender of DM Type 2 sufferer was conducted in all city health centers, Kendari, from January to December 2016. The result could be seen in Figure 1.

The results showed that DM Type 2 patients in all city health centers in 2016 were more likely to be women (61%) than men (39%). In general, the occurring of DM Type 2 is varied between male and female. Based on risk factor, female had a great opportunity caused by the increase of body's index mass. Premenstrual syndrome and postmenopause syndrome that distribute the fat of the body eligible to be accumulated due to the process of those hormonal can cause risk factor to DM Type 2.
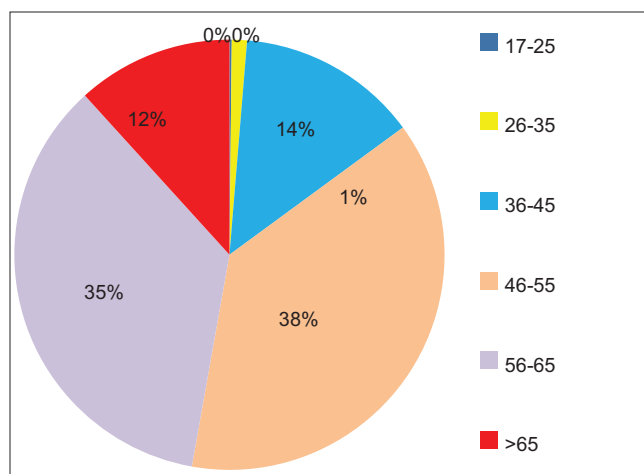

Figure 1: Data of the characteristic of patients with diabetes mellitus Type 2 based on gender

The Characteristic Based on the Classification of Age

The study on the characteristic of patients in terms of age of DM Type 2 sufferer was conducted in all city health centers, Kendari, from January to December 2016. Result could be seen in Figure 2.

The results showed that the majority of the sufferer of DM is from the old age 46 to 65 years (38%), to an old age, the function of the organ from the body declined, causing the decline of the function of endocrine and pancreas in producing insulin. At the age of 41–64 years are risky in suffering the disease of DM 3,3 time easier compared to the age of 25–40 because the decline of function of endocrine to produce of insulin (American Diabetes Association, 2015). Medical record of DM Type 2 Patient in Community Health Centre City of Kendari 2016.

The Characteristic Based on the Comorbidity

The study on the characteristic of patients in terms of comorbidity of DM Type 2 sufferer was conducted in all city health centers, Kendari, from January to December 2016. Result could be seen in Figure 3.

The results showed that hypertension (28%) is the largest comorbidity in patients with Type 2 diabetes in city health centers in 2016 and the second is hyperlipidemia (24%). Comorbidity mostly follow to the patients with DM is hypertension because increased endothel dysfunction effect of insulin resistance (American Diabetes Association, 2015).[7] Hypertension is one of the factors for the resistant of insulin and typically of disease that follows the disease of DM Type 2. The existence of hypertension could complicate the function of endotel, and the risk is greater once it is abandoned and could simply a great suffer on coronary heart. The role of hypertension in increasing micro- and macro-vascular risk
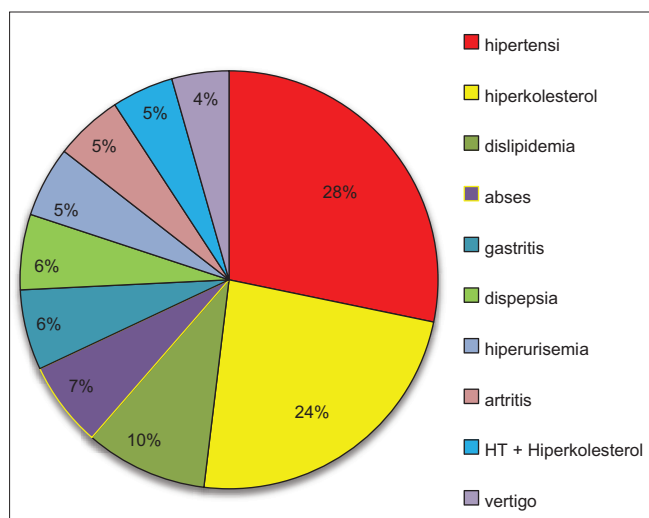
Figure 2: Data of the characteristic of patients with diabetes mellitus Type 2 based on the classification of age
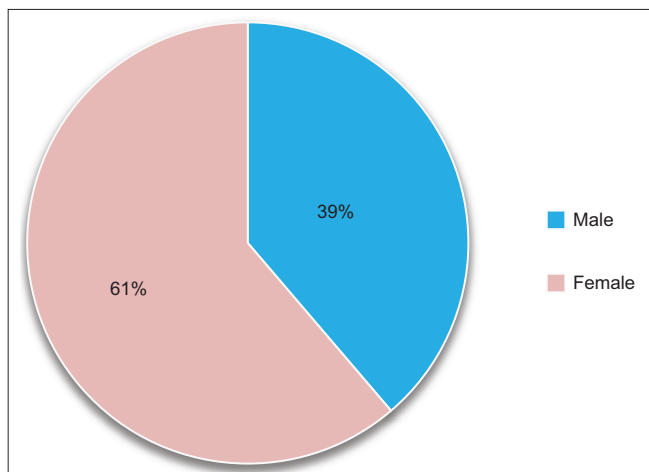

Figure 3: Data of the characteristic of patient of diabetes mellitus Type 2 based on the classification of comorbidity

in patients with DM has been confirmed in the UKPDS and hypertension optimization treatment trials. The American Diabetes Association recommends aggressive goals for blood pressure (<130/80 mm Hg) in patients with DM.

The second greatest disease after hypertense is hypercholesterolemia. Hypercholesterolemia occurred caused by the existence of the friction to the single genes that influenced the receptor on low-density lipoprotein so that it accumulated within the blood characterized by the high level of cholesterol of the blood (>100 mg/dL). The increasing of cholesterol and stacked in the vessel of the blood and arteries caused atherosclerosis because changed to due the system on metabolic of the DM patient (American Pharmacist Association, 2004). Dyslipidemia found as

the third most complicated disease after hypertense and hypercholesterolemia. This type of disease usually follows DM Type 2, one of the major causes is by lipid toxicity that causes the process of atherogenesis became progressive and changed due to the system on metabolic of the patient of DM.

ACKNOWLEDGMENT

CONCLUSION

38.80% and 61.20% of the percentage of the characteristic of DM disease Type 2 in all city health centers 2016 based on gender both male and female, while the characteristic of age was highly percentaged by the age of 46–55 years or 37,52%, and the characteristic of the patients based on the classification of comorbidity was dominated by hypertension about 17.71%.

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