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REDUCING EPIGASTRIC PAIN SCALE OF DYSPEPSIA PATIENTS THROUGH THE CONSUMPTION OF TAPIOCA FLOUR (*MANIHOT ESCULENTA*) AND TROPICAL FOREST HONEY: PRE-EXPERIMENTAL STUDY

By :
Andri praja satria
Universitas Muhammadiyah Kalimantan Timur, Indonesia
Israil
Universitas Muhammadiyah Kalimantan Timur, Indonesia
Corresponding author: aps273@umkt.ac.id

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Abstract
A collection of signs and symptoms that are often felt by people with dyspepsia are epigastric pain, nausea, vomiting, satiety, and discomfort. Traditional medicine applied by the community includes the consumption of tapioca flour (*Manihot esculenta*) and tropical forest honey to reduce pain complaints caused by dyspepsia. To determine the effect of tapioca flour and tropical forest honey consumption (TFGFH) on the epigastric pain scale in dyspeptic patients. This quantitative study used a pre-experimental design with one group pretest-posttest. After the paired t-test was carried out, it was found that the significance value of p-value = 0.000 which means that there is a significant effect of TFGFH consumption on the epigastric pain scale in dyspeptic patients. There is a significant effect of TFGFH consumption on decreasing the epigastric pain scale in dyspeptic patients in the working area of Sungai Siring Public Health Center, North Samarinda.

Keyword :
Tapioca flour, forest honey, epigastric pain, dyspepsia

1. Background

Data on the Indonesian population suffering from dyspepsia is around 40-50%, it is estimated that there are around 10 million people for the population aged 40 years or 6.5% of the total population (Safriani, 2015). In East Kalimantan, in 2016 dyspepsia was recorded as the 4th most common disease with a prevalence of 8% of the total population (Dinkes, 2017).

Dyspepsia is a disease that attacks the upper digestive system. Dyspepsia, known as ulcer disease or gastric disease, is a collection of symptoms that are felt mainly in the pit of the heart, and are characterized by other symptoms such as nausea, vomiting, feeling full and uncomfortable (Oh & Kwon, 2019). People with dyspepsia usually feel pain or discomfort in the pit of the stomach (epigastric). Pain is a subjective form of control and an unpleasant emotional state of actual or potential tissue damage where the damage is felt (Andaryo, 2013 and Kristanti, 2014).

In order to reduce complaints of pain that arise due to dyspepsia, treatment measures are carried out by providing interventions in the form of consuming tapioca flour *(Manihot esculenta)* with a tropical forest honey using simple ingredients without harmful chemicals.

Tapioca flour in 100 grams contains 88.20 grams of carbohydrates and calories as much as 363 kcal and 85% starch content consisting of 15.3% amylase and 69.70% amylopectin. The results of amylopectin and amylaso will determine the nature of starch after heating. The greater the amount of amylase in starch, the greater the amount of water that will be absorbed, and the gel formed will be faster (Gardjito,Djuwardi & Hermayani, 2013).

Honey contains various types of sugars such as fructose, glucose, and serous. There is also a salt content that can neutralize and reduce gastric acid levels and enzymes that can help the digestive process in the body, such as invertase converts sucrose into dextrose and levulose, desmutose enzyme converts flour into maltose, as well as other enzymes such as catalase enzymes, inulases and enzymes. maltase (Sihombing, 1997 dalam Nofrianti, Azima, Elyasmi, 2013 dan Khomsan, 2009).

North Samarinda itself, especially in the working area of the Sungai Siring, public health center, after a survey, it was found that the number

of people with dyspepsia had increased from July to September 2017. Based on the results of medical records of public health center, there were 25 cases in July, 38 cases in August, and 43 cases in September.

Based on a preliminary study conducted in the working area of Sungai Siring public health center, north Samarinda, it was found that there are still many people who preserve their original culture, such as the Bugis people who still consume a typical food made from tapioca flour, namely lime for daily food. It was found of 20 dyspepsia patient who said they had pain complaints, including 3 severe pain, 12 moderate pain, and 5 mild pains. Then after the interview, 14 people took treatment to overcome complaints by coming to the public health center or only taking over-the-counter drugs, while 6 of them did not take treatment if complaints of pain occurred.

2. RESEARCH METHODS

Design

This study was conducted on dyspepsia patients in the work area public health center, north Samarinda, Indonesia. The study was conducted in 2018 as a randomly arranged pre-experimental study.

Participants

The number of samples based on the minimum for pre-experimental research is 15, with simple random sampling method used in sample selection. The sample is selected randomly until the sample size is reached. Patients over 25 years old, with a history of dyspepsia, no complications, no mental disabilities or perceptual problems, no communication difficulties. Those who consume drugs and foods that can stimulate the emergence of dyspeptic syndrome during the intervention are excluded from the study.

Data Collection Tools

Introductory Information Form: On the form, preceded by information such as gender, age and ethnicity of the patient.

Numerical Pain Scale: In this study, using a pain measurement tool, namely the Numeric Rating Scales (pain scale 0-10) is a pain measurement tool that has the simplest appearance in applying so that it is most often used compared to other measuring tools in research (Hjermstad et al., 2011)

Form for Pre-Experimental: In this form, information about measuring the pain scale, the timing and duration of the intervention, what actions will fail the study and when the results of the study are presented.

Data Collection Procedure

Patients were informed about the study and information regarding form filling. The patient filled out the form 15 minutes before consuming TFGFH on the first day. TFGFH was prepared every day just before being consumed by the patient and it is always asked whether taking drugs or foods that can trigger dyspepsia symptoms. Consumption of TFGFH was done for 7 days in the morning 1 hour before breakfast. On the seventh day, the second measurement of pain scale was carried out.

Data analysis

The SPSS package program (Statistical Package for Social Sciences) 22 was used for coding the data obtained from and for data analysis, and research with a 95% confidence level. Paired T Test was used to determine the average difference between two samples that are paired or related.

Ethical consideration

Principles of research ethics are contained in the information and voluntary consent forms. It is explained that the respondent's information will be protected and kept confidential to ensure the protection of individual rights in research.

3. RESULTS AND DISCUSSION

Table 1. Demographics characteristic of respondent

Variable	Category	Respondent	Percentage
Gender	Male	6	40
	Female	9	60
Age	26-35	4	26.7
	36-45	6	40
	46-55	5	33.3
Ethnic	Bugis	6	40
	Dayak	4	20
	Jawa	3	26.7
	Kutai	2	13.3

Table 1 shows that 60% of patient are female, 40% are around 36-45 years old and 40% are Bugis ethnic.

Table 2. Paired T test result

	Mean	Difference (S.D)	95%	t	df	*p*
Pain scale before TFGFH (n=15)	7.00	2.53 (1.46)	1.72 – 3.34	6.7	14	0.000
Pain scale after TFGFH (n=15)	4.47					

Table 2 illustrates that there was a significant difference in the score for TFGFH consumption before (M=7.0, SD=1.46) and after (M=4.47, SD=1.46) conditions; t(14)=6.7, p=0.000

Discussion

The result of Pair T test above illustrates the p-value (0.000), it is mean there is a significant effect on consumption of tapioca flour (*Manihot esculenta*) combined with tropical forest honey on the epigastric pain scale in patients with dyspepsia in the working area of the public health center, North Samarinda.

The physiological effects of TFGFH generally work into gastric mucosa due to its content of bioactive compound such saponin, tannin, and flavonoid which known has anti-inflammatory effect, can increase healing process of gastric mucosa, while protect the mucosa from attacked by bacteria (Salawu, et al 2009 and Meilawaty, 2013)

Saonins has a protective effect on the gastric mucosa because they increase the work of prostaglandin products from COX-1, namely PGE2 and PGI2 so that mucus and bicarbonate production in the stomach also increases and local contact between HCl and gastric mucosa decreases, at the same time saponins can also help accelerate the wound healing process more rapidly so that epithelial regeneration can be increased (Meilawaty, 2013)

In addition, tannins are also known as adsringents, which are agents that can form protein precipitation on the cell surface. If the cell surface is in the stomach, the tannins can coat the cell and defend the mucosal layer against proteolytic enzymes (Salawu, et al 2009). While tannins have antioxidants that play a role in counteracting free radicals, triggering cell membrane damage, so that the release of inflammatory mediators can be reduced (Meilawaty, 2013).

Furthermore, flavonoids have an anti-inflammatory effect by inhibiting the activation of prostaglandins by blocking the pathway without affecting the synthesis of these prostaglandins, so that the release of inflammatory mediators can be suppressed.

Sukron (2016), The administration of starch syrup on the epithelial integrity of the gastric mucosa in male wistar white rats, which shows that tapioca flour contains amylopectin and amylase compounds that are consumed in solution form and are proven to repair gastric mucosal damage. Hammad (2014), honey contains various enzymes, especially anfirtis enzymes, which help convert sucrose into glucose and fructose elements so that they are easily digested and absorbed by the body and honey contains amylase and lysozyme enzymes. Honey that is consumed after eating, honey will work to overcome the effects of enzymes that help digestion in the stomach that affect the stomach wall. Hammad (2014) explained that honey can function to strengthen the stomach wall, in research conducted by modern scientists suggest that honey contains enzymes that can convert ammonia into glucose so that it can strengthen the stomach. Honey also has a low acidity level, namely pH 7.3 where the temperature is not suitable for bacterial growth, so it is very effective at inhibiting the growth of bacteria in the stomach, in this case, helico bater pylori. Honey has biological properties such as antibacterial activity. All honeys had antibacterial activity regardless of botanical origin. Honey has varying antibacterial effect, which can attribute to the phenolic content of each honey. Reported the antimicrobial effect of honey with different concentrations of phenols, flavonoids, and hydrogen peroxide. The honey illustrates a strong correlation exists between the bacterial inhibitory capacity and popyphenol content in honey

Table 2 describe that there was a decrease in the epigastric pain scale after the intervention. Based on the theory, pain is a protective mechanism intended to raise awareness that tissue damage has or will occur (Hariyanto dan Sulistyawati, 2015).

4. CONCLUSION

It is known that the average epigastric pain scale in dyspeptic patients before consuming honey-combined tapioca flour porridge was on a scale of 7 and after consuming honey-combined tapioca flour porridge decreased to a scale of 4. These results were obtained after analyzing the data listed in table 4.2 Distribution epigastric pain scale. After the paired t-test was carried out, the significance (P) value = 0.000 or <0.05 was obtained. The decision of the hypothesis that H0 is rejected means that there is a significant effect between tapioca flour porridge (amylum manihot) combined with honey (caiba pentandra) on the epigastric pain scale in patients with dyspepsia in the working area of Sungai Siring Public Health Center, North Samarinda District.

5. REFERENCES

Andarmoyo, Sulistyo. (2013). *Konsep & Proses Keperawatan Nyeri. cetakan 1*. Jogjakarta : Ar-Ruzz Media.

Anggi, Caesar Laine. (2011). *Pengembangan Produk Bubur Instan Berbasis Pati Singkong (Manihot Esculenta Crantz) Termodifikasi*. Tesis. Institut Pertanian Bogor.

Anggita, Nina. (2012). *Hubungan faktor konsumsi dan karakteristik individu dengan persepsi gangguan lambung pada mahasiswa penderita gangguan lambung di Pusat Kesehatan Mahasiswa (PKM). Universitas Indonesia Tahun 2011*. Tesis. Universitas Indonesia.

Asrtarini, Gita Herayanti. (2016). Pengaruh pemberian madu terhadap penurunan

intensitas nyeri haid (*dysmenorhea*) pada remaja putri di SMAN 1 Sedayu Bantul. Tesis. Stikes Jenderal Achmad Yani Yogyakarta.

Bangun, A.P. (2004). *Mengatasi Problem Pencernaan dengan Terapi Jus*. Jakarta : Argomedia Pustaka.

Dinkes. (2017). *Gerakan Masyarakat sehat.* Dinas Kesehatan Kalimantan Timur.

Gardjito, Murdijati, Djuwardi, Anton dan Hermayani, Eni. (2013). *Pangan Nusantara : Karakteristik dan Prospek Untuk Percepatan Diversifikasi Pangan*. Cetakan Pertama. Jakarta : Kencana.

Gustin, Rahmi Kurnia. (2011). *Faktor-faktor yang berhubungan dengan kejadian gastritis pada pasien yang berobat jalan di Puskesmas Gulai Bancah Kota Bukit Tinggi Tahun 2011*. *Tesis*. Universitas Andalas.

Hammad, Sa'id. (2014). *Kedokteran Nabi.* Cetakan 1. Ahmad Syakirin (penerjemah). Solo : Aqwamedika.

Hariyanto, Awan dan Sulistyawati, Rini. (2015). *Buku Ajar Keperawatan Medika Bedah 1 Dengan Diagnosis NANDA Internasional.* Cetakan 1. jogjakarta : Ar-Ruzz Media.

Karimah, Ima. (2011). *Nilai Indeks Bubur Instan Pati Singkong dan Bubur Instan Pati Resisten Singkong*. Tesis. Institut Pertanian Bogor.

Khomsan, Ali. (2009). *Rahasia Sehat dengan Makanan Berkhasiat.* Edisi 1. Jakarta : Kompas Media Nusantara.

Kristanti, Nita. (2014). *Pemberian Guided Imagery Rilaxation Terhadap Penurunan Nyeri Abdomen pada Asuhan Keperawatan Ny. S dengan Dispepsia di ruang IGD RSUD Karanganyar*. Tesis. STIKES Kusuma Husada Surakarta.

Misnadiarly. (2009). *Mengenal Penyakit Organ Cerna : Gastritis (dyspepsia atau maag), Infeksi Myobateria pada Ulcer Gastrointestinal.* Edisi 1. Jakarta : Pustaka Populer obor.

Nasution, Novita Kurniati; Aritonang, Evawany E.; Nasution, Ernawati. (2015). *Hubungan Pola Makan Dengan Kejadian Sindrom Dispepsia Pada Mahasiswa Fakultas Kesehatan Masyarakat Universitas Sumatra Utara Tahun 2015.* Departemen Gizi Kesehatan Masyarakat FKM USU.

Notoatmojo, S. (2012). *Metodologi Penelitian Kesehatan*. Jakarta : Rineka Cipta.

Nofrianti,R., Azima, F., Elyasmi, R,. (2013). *Pengaruh Penambahan Madu terhadap Mutu Yoghurt Jagung*. Jurnal Aplkasi Teknologi Pangan. Vol.2 . (2). (60-67).

Sakri,M. Faisal. (2015). *Madu dan Khasiatnya Suplemen Sehat tanpa Efek Samping*. Cetakan 1.Yogyakarta : Diandra Pustaka Indonesia.

Sukron, M. (2016). *Pengaruh Pemberian Sirup Tepung Kanji terhadap Integritas Epitel Mukosa Lambung*. Tesis. Universitas Islam Agung Semarang.

Syafriani. (2015). *Hubungan Pengetahuan dengan Kejadian Dispepsia pada Masyarakat Usia 30-49 tahun di Desa Sepungguk wilayah kerja Puskesmas Salo tahun 2015. Tesis. Universitas Tuanku Tambusai Riau.*