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Victor Imanuel W. Nalle. " The Politics of Intolerant Laws against Adherents of Indigenous Beliefs or in Indonesia ", Asian Journal of Law and Society, 2021

Clinical Observations of Golden Seachers (Stichopus Variegatus) and Acupuncture in Diabetes Mellitus Patients Suryawan Ang1, Maria Theresia Vera Ernawati Sugiarto2 1,2 Darma Cendika Catholic University, Indonesia. akupunktur@ukdc.ac.id Abstract Keywords clinical observation; golden Indonesia is the largest archipelagic country in the world which has sea cucumber; acupuncture in 17,504 islands with a coastline length of 81,000 km with an area of diabetes mellitus patients. marine waters of about 5.8 million km2 (75% of the total area of Indonesia), stretching on the equator, causing Indonesia to have abundant biological resources. rich and diverse both for landand sea areas, so it is known as a mega biodiversity country(Karnila, 2020). This biological wealth needs to be utilized as well as possible for the welfare of the Indonesian people. One of the marine products that have important economic value is sea cucumber or also called sea cucumber, teat fish and sea ginseng. This type of research is quantitative research using a quantitative design with experimental research with aapproach quasi-pretest- posttest control design. There was a decrease in blood sugar levelsand symptoms of diabetes in diabetic patients during 4 weeks of therapy, who were given gold sea cucumber treatment therapy and acupuncture as an alternative treatment. I. Introduction Indonesia is the largest archipelagic country in the world which has 17,504 islands with a coastline length of 81,000 km with an area of marine waters of about 5.8 million km2 (75% of the total area of Indonesia), stretching on the equator, causing Indonesia to have abundant biological resources rich and diverse both for land and sea areas, so it is known as a mega biodiversity country (Karnila, 2020). This biological wealth needs to be utilized as well as possible for the welfare of the Indonesian people. One of the marine products that have important economic value is sea cucumber or also called sea cucumber, teat fish and sea ginseng. Agricultural land is increasingly narrow due to the shifting of the function of agricultural land into industrial areas, so that hydroponic cultivation is considered appropriateto utilize available land because this cultivation system does not require soil media. The hydroponic system uses a variety of planting media other than soil, among others, with mediasuch as fuel husk, husk, sand, zeolite, rockwoll, peat (peat moss) and coconut husk powder (Prihmantoro in Zalilani, M. et al. 2019) Sea cucumbers are easily found in the Asia Pacific Ocean, especially in Indonesia. Sea cucumbers are bottom feeders, which are creatures that live from eating organisms on the seabed. The sea cucumber will absorb the sea sand, then in its stomach, the organic matter is absorbed, releasing the clean sand again. Such capabilities make coastal sediment areas and coral reefs loose. The effect there will be many creatures, there will be a lot of fish and therefore called sea cucumbers. If there is no sea cucumber, the sediment is not loose, there isnot much organic matter, and the fish are reduced. (Wirawan, 2018) DOI: https://doi.org/10.33258/birci.v4i4.3252 Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Volume 4, No. 4, November 2021, Page: 11893-11903 e-ISSN: 2615-3076 (Online), p-ISSN: 2615-1715 (Print) www.bircu-journal.com/index.php/birci email: birci.journal@gmail.com Degenerative diseases are caused by a process of

decreasing organ function which generally occurs in old age. This disease has many varieties and symptoms and often affects people in general. So that the existence of an expert system to diagnose degenerative diseases is the right step so that people can diagnose their disease early without the help of a doctor. Decreased cell function can also occur in degenerative diseases. But what is meant by degenerative disease here is a premature decline in cell function. Degenerative diseases can be prevented by minimizing the risk factors that cause it. The main risk factors for degenerative diseases are unhealthy eating patterns, lack of physical activity, cigarette consumption, and increased stress and exposure to the causes of degenerative diseases. Over time, everyone must experience a change or regeneration of cells in their body. Naturally, the body's cells also experience a decline in function due to the aging process. In addition, socio- economic changes and appetite will result in changes in people's eating patterns that tend to distance themselves from the concept of a balanced diet, thus having a negative impact on health and nutrition. A diet high in saturated fat and sugar, as well as low in fiber and low in micronutrients will cause problems of obesity, over nutrition, and increase free radicals whichultimately result in changes in disease patterns from infectious to non-infectious chronic diseases or the emergence of degenerative diseases. Therefore, with the increasing life expectancy of Indonesian people, the incidence will increase and become an importantdisease; moreover often cause sudden death. According to Handajani, et al (2010), thepercentage of deaths from degenerative diseases can be shown in Figure 1.1 Figure 1.1 Percentage of deaths from degenerative diseases 15 years based on ENMD (Endocrine, nutritional, and metabolic disease = hormonal, nutritional, and metabolic disorders), DCS (Disease of Circulatory System = diseases of the heart and circulatory system) and non (ENMD + DCS) (Handajani, et al, 2010) One indicator of the condition of diabetes mellitus (DM) is high blood glucose levels due to low insulin secretion or reduced insulin receptor sensitivity. Diabetes mellitus is a degenerative disease that occurs when a disorder of carbohydrate metabolism, namely the pancreas is unable to produce insulin or the sensitivity of cell receptors to insulin is very low because insulin takes glucose from circulating blood so that blood glucose levels are high followed by high HbA1c (glycated hemoglobin) results. According to WHO (2016), the number of DM sufferers in the lower middle group with a total population of 258 million people in Indonesia is 6%, cancer patients are 13%, and respiratory tract sufferers are 5% of the total population. Diabetes mellitus causes an increase in oxidative stress caused byreactive oxygen species (ROS) as free radicals. The golden sea cucumber (Stichopus hermani) is a type of sea cucumber that is rich in antioxidants. It contains glycosaminoglycans, such as heparan sulfate and chondroitin sulfate, which are beneficial for human health. In general, sea cucumbers have good nutritional value for humans, such as protein, niacin, riboflavin, chondroitin sulfate, coelomic fluid, palmitic, stearic and linoleic acids, squalene, to triterpenoids. Further research is still needed to truly ascertain the potential of this golden sea cucumber which can have a major impact on human health. Although there is no valid research, but golden sea cucumbers are also believed to be able to help prevent diabetes, as much as 86.8% of Sara gold sea cucumbers will contain protein. This of course makes golden sea cucumbers beneficial for diabetics because the protein content is considered capable of controlling blood flow in the body. Basically, complications that occur in DM patients are the result of the formation of ROS. The most important management of type 2 diabetes mellitus is controlling blood sugar levels, because it plays a very important role in preventing complications. It is currently believed that oxidative stress plays an important role in the development of vascular complications in diabetes, in particular type 2 diabetes mellitus. Strict glycemic control is a

top priority in the management of diabetes, but in reality only a small proportion of patients achieve long-term glycemic targets. Based on this phenomenon and the characteristics of the progressive course of type 2 diabetes mellitus, a new strategy that is earlier and more aggressive in the long term use of hypoglycemic drugs is currently being used. Therefore, the discovery of new drugs that are able to control glycemic conditions and include reducing the occurrence of ROS due to type 2 diabetes mellitus must be further enhanced, especially the use of natural ingredients as part of nutrigenomic therapy. Indonesia is an archipelagic country and golden sea cucumbers are marine animals that are very much found in Indonesian waters. The golden sea cucumber (Sticopus hermanii) contains many bioactive compounds, including triterpene glycosides (saponins), phenolics, and chromium minerals. It also contains a variety of vitamins and minerals that have anti- oxidant activity. Saponins play a role in increasing tyrosine phosphorylation of the subunit of the receptor insulin, inhibiting tyrosine phosphatase, and stimulating glucose transport activities, such as GLUT4. Phenolics can stimulate an increase in insulin secretion from pancreatic beta cells and provide protection against cell damage caused by oxidative stress associated with free radicals, while chromium can increase the number of insulin receptors,so that the bond between insulin and cells increases, inhibits protein tyrosine phosphatase 1 and activates insulin. receptor tyrosine kinase (IRTK). Based on the content contained in goldsea cucumbers mentioned above, it is hoped that gold sea cucumbers can be used as a treatment for type 2 diabetes mellitus. 4 in a rat model of Diabetes Mellitus given the extract of the golden sea cucumber (Sticophus hermanii)". The aim is to prove that gold sea cucumber extract can reduce blood sugar levels and increase skeletal muscle GLUT4 levels (examined by ELISA) in a rat model of type 2 diabetes mellitus. This study is a laboratory experimental study, with a completely randomized design. Thirty Wistar rats were randomly divided into five groups. Group 1 is a negative control group (normal rats), and groups P2 – P4 are wistar rats with type 2 diabetes mellitus by administering STZ 50 mg/kg BW by i.p. Group P2 is a positive control group (without giving anything), P2 are the group given metformin 100 mg/kg BW (the first line drug for type 2 diabetes mellitus), groups 4 and 5 arethe group given the golden sea cucumber extract at a dose of 8.5 mg/kg BW and 17 mg/kg BW. The duration of administration of metformin and golden sea cucumbers was for 2weeks, then the experimental animal wistar rats were sacrificed to measure their blood sugar levels with Nesco multicheck sticks and muscle GLUT4 levels using the elisa method. The results of this study were 1) The blood sugar levels of rats model of type 2 diabetes mellitus decreased significantly, with the administration of sea cucumber extract doses of 8.5 mg/kg BW and 17 mg/kg BW and gave the same effect as the administration of metformin 100 mg/kg BW, 2) The muscle blood sugar level of the rat model of type 2 diabetes mellitus increased significantly, with the administration of golden sea cucumber extract at doses of 8.5 mg/kg BW and 17 mg/kg BW and gave the same effect as the administration of metformin 100 mg/kg BW, 3)) Glutathione levels 4 mice model diabetes mellitus type 2 increased significantly, with the administration of gold sea cucumber extract doses of 8.5 mg/kg BW and 17 mg/kg BW and gave the same effect as the administration of metformin 100 mg/kg BW. The conclusion of this study is that administration of golden sea cucumber extract at a dose of 8.5 mg/kg BW or 17 mg/kg BW in rat's model of type 2 diabetes mellitus gave statistically the same effect as the administration of metformin 100 mg/kg BW, only it seems that the dose of 8.5 mg/kg BW gives a better effect. (Safitri, 2019) In addition to healing methods with herbs and traditional medicines, the acupuncture method is also one of the natural ways to cure diabetes which is often used to help lower blood sugar levels. Acupuncture is

a traditional medical technique originating from mainland China. Some of the symptoms that arise in diabetes, according to experts in traditional Chinese medicine, are caused by an imbalance in the flow of energy (Qi) in the body, which then triggers an increase in blood sugar levels. In order for blood sugar levels to return to normal, it is necessary to take an action to regulate blood circulation and energy (Qi) and balance organ functions to improve pancreatic function and cell sensitivity to insulin. The method of healing with the acupuncture method is by inserting small needles into points on the body. The goal is to reactivate the body's energy flow so that the energy imbalance that occurs can be overcome. Thus, the body will be able to perform performance in a way that returns to normal. Acupuncture points are located on the stomach, spleen, kidneys and can be in the ears. The needle implanted at a certain point triggers the work of the pancreas which produces insulin so that blood sugar levels can be controlled. This acupuncture method is very beneficial for diabetics because it has no side effects. (Susanawati, 2014) Acupuncture has been widely used in the treatment of diabetes and its complications in China. Acupuncture therapy is effective for diabetes and its complications, such as diabetic gastroparesis, diabetic peripheral neuropathy). In the treatment of diabetes, acupuncture therapy shows the main effects related to blood glucose control, weight loss, maintaining the function of the pancreas, improving insulin resistance and normalizing hormone levels namely melatonin, insulin, glucocorticoids and epinephrine. (Amalia, et al, 2019) The purpose of this study was to determine the value of the content of gold sea cucumbers and acupuncture in patients with diabetes mellitus from clinical observations. II. Review of Literature Type of research is a quantitative research using a quantitative design with aexperimental research with aapproach quasi-pretest-posttest control design. The sample size used was 12 people who received acupuncture and gold sea cucumber treatment. Exclusion criteria in this study were respondents with acute, chronic diabetes mellitus, obesity, had complications of severe disease such as kidney failure and heart disease, etc., had major injuries to other body parts such as hands, feet, back, etc. The acupuncture points used in this study were SJ-5 (Waiguan), Zunsalin (ST36), sanyinjiao (SP6), Hegu (LI4), Quchi (LI11) and Tai chong (LR3) points. According to Holistic Acupuncture (2006), some points that are often used are zusanli (St-36), sanyinjiao (Sp-6), guanyuan (CV-4), taixi (KI-3), zhongwan (CV-12), geshu (BL-17), quchi (LI-11), hegu (LI-4), shenmen (HT-7), waiguan (SJ-5), fuliu (KI-7). These acupuncture points have been used both in America and in other countries in the world for the treatment of diseases such as: sugar, hypertension (high blood pressure), pinched nerves, stroke, stomach, diabetes, infertility. obesity, heart, insomnia, frequent dizziness, obesity, pinched nerves, erectile dysfunction / premature ejaculation due to stress, rheumatism, migraine, kidney, gout, Bell's Palsy, Tinnitus. The acupuncture points used in this study were selected based on various scientific studies of acupuncture for the management of patients with type 2 diabetes mellitus with its complications. The patient was stabbed with acupuncture needle stimulation using a TDP lamp for 30 minutes. Therapy at the Zusanli acupuncture point alone, showed no statistically significant effect of acupressure at the Zusanli point on fitness (V02max) and blood sugar levels in patients with diabetes mellitus II who received oral anti-diabetes. It is recommended to do further research using acupressure with a combination of several acupuncture points and a longer treatment time. (Fihayati, 2012) For severe thirst, add Liangquan (CV 12), for hunger prick immediately aftereating on Zhongwan (CV 12), for ulceration in the mouth add Tongli (HT 5), Hegu (Fact Sheet 4) and Zhaohai (KI 6), for blurred vision add Yanglao (SI 6) and Guangming (GB 37). The acupuncture method used is based on Jiao's syndrome consisting of upper burner, middle burner and lower burner. The upper burner strengthens the lungs,

strengthens yin and dissipates heat at the Chize (LU5), Liangquan (CV23), Zusanli (ST36), Taixi (KI3), Yuji (LU10) points. Middle burner dissipates gastric heat and strengthens yin. at the points of Sanyinjiao (SP6), Zusanli (ST36), Neiting (ST44), Taixi (KI3), Zhongwan (CV12). The lower burner strengthens kidney function and nourishes jing at the points of Guanyuan(CV4), Sanyinjiao (SP6), Taixi (KI3), Jingmen (GB25), Rangu (KI2), Qihai (CV4). The strengthening method, carried out every two days with a TDP lamp, for example, was left 30 minutes at the reflection point or the point of the pancreatic reflex zone, such as Yinlingquan (SP9), Diji (SP8), and Sanyinjiao (SP6), Jianli (CV11), and Zhongwan (CV12).). Needle left for 30 min, or in combination with moxibustion after needleing. Acupuncture is given once a day or once every 2 days, for 3 months. According to Zhan et al. from Jiangxi, China reported in 14 cases with mild and moderate NIDDM treated only with acupuncture at the Zusanli point (ST36), 7 cases showed excellent results, 3 cases improved and 1 case was ineffective. Mean fasting blood sugar (12.66 ± 0.67) mmol/L before treatment and dropped to(7.72 ± 0.39) mmol/L after treatment. Experimental diabetic rats were divided into 3 groups, Electro Acupuncture (EA) group (n=8), TENS group (n=8), stabbing on Zusanli (ST36) for 20 minutes once every 2-3 days for 5 weeks, and 1 group without treatment (DM group, n=6) respectively. In comparison with the DM group, the increase in plasma glucose levels was significantly lower in the EA group (p0.05) over 6 weeks, and the symptoms of polyphagia, polydipsia and polyuria were reduced in the EA group. (Dewi, 2012) Tianshu ST-25, the Mu-front point of the LI meridian, is located on the ST meridian, and therefore the Qi from the LImerges and concentrates in the front position of the body. Location: 2 cun lateral from the umbilicus (navel). The close relationship between the ST and the intestine is noted in thebook "Spiritual Pivot" which states, "The small intestine and large intestine are related to the ST." Furthermore, the ST organs are related externally and internally to the SP organs, which dominate transport and transformation, playing an important role in regulating the gut. (Elvida, 2011) Overweight and obesity are two different but related things. Usually patients with diabetes mellitus are overweight. Overweight is excess body weight compared to the ideal weight caused by the accumulation of fat or non-fat tissue. Factors that can affect overweight include: genetics, environment, diet, psychology and physical activity. Parameters to determine overweight is to perform an anthropometric examination which includes measurements of height and weight as well as waist circumference. According to TCM obesity is related to the overweight category called Fei Pang or Tan Yin which means fat is caused due to dysfunction of the spleen and kidney, leading to the accumulation of phlegm and dampness in the body. In this overweight case study, the patient had Qi stagnation syndrome and blood stasis. Acupuncture point therapy at the tianshu (ST25), zusanli (ST36) and zhong (CV17) and taichong (LV3) points serves to activate Qi and blood circulation and eliminate blood stasis. (Erma, 2016) III. Result and Discussion 3.1. Acupuncture for Diabetics Diabetic Syndrome (Xiaoke) according to eastern medicine includes heat in the lungs, excess gastric fire, qin deficiency and spleen yin deficiency, kidney yin deficiency and yin and yang deficiency. The points used in diabetes cases were Sanyinjiao (SP 6), Yinlingquan (SP 9), Quchi (Fact Sheet 11), Zhongwan (CV12), Zusanli (ST 36) and Fenglong (ST 40). (Boy, 2015) Acupuncture uses needles to stimulate specific points on the body to improve energy flow and balance along energy pathways (meridians). Traditional medicine acupuncture sees the human body as an energy flow system, when the energy flow is balanced, the body is healthy. Acupuncture is associated with energy imbalances, such as "yin deficiency". The terms “yin” and “yang” describe opposing energies that should remain in balance. Yin-Yang is relative. Under certain circumstances, Yin can turn into Yang, and vice versa. Yin andYang

are interdependent, limiting, and always in a state of dynamic change to ensure their balance (homeostasis). Therefore, the Yin-Yang principle explains physiological functions and pathological changes, as well as guides in therapy and diagnosis. According to Lumbar (2020), the stabbing effect on acupuncture treatment occurs through nerve conduction. In general, the stabbing effect is divided into: local effects, segmental effects and central effects. 3.2. Local Effects Acupuncture needle insertion causes small/micro-injury to the tissue which causes the release of tissue hormones (mediators) and causes a biochemical chain reaction. This reaction can be seen from the redness of the puncture site. Locally occurring effects include capillary dilatation, changes in the interstitial environment, activation of nonspecific immune responses, increased capillary permeability, stimulation of nociceptors, and leukocyte and Langerhans cell withdrawal. 3.3. Segmental/Regional Effects The action of acupuncture stimulates nerve fibers and is transmitted from the spinal cord segment to other nerve cells. Thus, it is stated that this segmental effect affects adjacent spinal cord segments. 3.4. Central Effect Stimuli that reach the spinal cord are then transmitted to the central nervous system via the brain stem, gray matter, hypothalamus, thalamus and cerebrum. Thus, stabbing canrelieve pain symptoms, activate the body's defense mechanisms, thereby restoring homeostasis. In the human body there are energy channels that have certain patterns in all parts and surfaces of the body. These energy channels, also known as meridians, can be thought of as an irrigation system that energizes the body's tissues. If there is an obstacle in its movement, it is like a dam that inhibits the flow rate to the next side. The meridians can be affected by their performance using punctures at acupuncture points, which then remove the blockages in the energy dam and restore proper flow. According to Lumbar (2020), the advantages of acupuncture include: safe and natural, effective in reducing patient complaints, cheap and rational. Safe and natural means not using chemicals that can damage the body. Effectively reducing patient complaints means reducing taste all body aches, eliminate dependence on chemical drugs, heal allergies, even mentioned can also be an alternative treatment for degenerative sufferers. In addition to treating physical ailments, mental stress can also be cured through acupuncture. Treatment with this method can be soothing, especially when combined with treatment using other methods. This is why acupuncture can also be called a way of calming the mind. While cheap means only using a tool in the form of a sterile needle that is inserted at a certain point of the body. Without drugs that contain chemicals, or herbal concoctions. In addition, rational means that acupuncture is an alternative treatment. Because it uses sharp objects that are stabbed at certain points on the skin, there are some people who feel a side effect of acupuncture, namely a little pain because of the low pain threshold. Also feel stiff or tingling when the acupuncture needles are inserted. There may also be a few drops of blood when the needle is removed because the acupuncture points are close to large veins. In some very rare cases, recipients of acupuncture treatment methods feel dizzy or nauseous during acupuncture. To minimize side effects that may arise, you should not drink drinks that contain alcohol if you have planned to receive acupuncture treatment. For women, also make sure that you are not pregnant at the time because there are some acupuncture points that should not be stimulated during pregnancy so as not to cause a miscarriage. (Lumbar, 2020) There are 4 symptoms of Xiaoke (diabetes), namely increased appetite, sufferers always want to drink (increased thirst), a lot of urine (increased fluid expenditure), and reduced body weight. Xiaoxia syndrome is divided into three, upper, middle, and lower xiao. Including the top xiao if the dominant symptom is a lot of drinking. It is categorized as middle xiao if the dominant symptom is eating a lot, lower xiao if the dominant symptom is a lot of

urination. If all symptoms are dominant, all categories are included. Upper xiaoke syndrome occursbecause of disorders of the lungs, middle xiaoke due to disorders of the spleen and stomach, and lower xiaoke due to kidney disorders. According to Dr. William, the factor that causes xiaoke is a lack of yin in the kidneys, lungs, spleen, and stomach, so that these organs are likeburning and consequently draining fluids (xiaoke). Symptoms of excessive thirst, drinking a lot, frequent urination, weakness, red tongue tip, yellow thin webbed tongue, fast and strong pulse, for example, are manifestations of poor lung function. Symptoms of hunger, increased appetite, thin body, constipation, dry tongue, thirst, frequent drinking and urination are also manifestations of heat and fire in the stomach which causes digestion to work faster than usual. Therefore, the stomach is also the target of Xiaoke's treatment. (Herbalchina, 2011) There are groups of acupuncture points to achieve balance goals, namely stimulating endocrine organs combined with dominant points and specific organ points. For the test to stimulate the pancreas in xiaoke, the back shu point (Pishu BL11), Yuan point (Taibai SP 3) and Zusanli point (ST 36) for the upper jiao (abdomen) were used. Endocrine includes pancreatic beta-cells. Stimulation of diabetes mellitus at the Taibai, Pishu and Zusanli acupuncture points, is a direct strengthening of the soil organs (spleen-stomach) namely segmental and general organ stimulation towards the center to affect the Pancreas-Beta-cell organ functionally. (Saputra, 2002) 3.5. Symptoms of Xiaoke (Diabetes) Xiaoke is a collection of aspects of symptoms that arise in a person caused by an increase in blood glucose (blood sugar) levels due to insulin deficiency, both absolute and relative. (Aribowo, 2012). Higher blood sugar levels will damage body tissues and cause complications in blood vessels. The higher the blood sugar level, the more often you urinate (polyuria), often feel thirsty (polydipsia), also eat a lot / often get hungry (polyphagia) and the higher the postprandial hyperglycemia level, which means the risk of cardiovascular disease increases. Postprandial hyperglycemia is a blood sugar level two hours after eating that exceeds the normal value (200 mg/dL). (Aribowo, 2012) The following is the range of normal blood sugar levels in the body: a. Before meals: about 70-130 mg/dL b. Two hours after eating: less than 140 mg/dL c. After not eating (fasting) for at least eight hours: less than 100 mg/dL d. At bedtime: 100 – 140 mg/dL (Allert, 2018) Xiaoke syndrome is divided into 3 namely upper xiaoke, middle xiaoke, lower xiaoke, also spleen organ qi-xu syndrome (related to xiaoke), liver Qi stagnation (related to xiaoke). a. Xiaoke above is fire/heat lung syndrome. Clinical manifestations: often feel thirsty (polydipsia), dry mouth and tongue, red tongue, especially at the tip of the tongue with a yellow coating. The therapeutic points are BL13 (Feishu), LU 5 (Chize) for heat elimination, SP-6 (sanyin jiao) for yin tonification and ST-36 (Zusanli) Qi tonification. b. Middle Xiaoke is gastric fire/heat syndrome. Clinical manifestations: frequent thirst (polydipsia), frequent hunger (polyphagia), epigastric pain, constipation and dry defecation. The therapeutic points are Pishu (BL20), Zhongwan (CV 12) (front mu pointof the stomach), neiting point (ST 44) for heat elimination in the gastric meridian),sanyinjiao point (SP 6) for Yin tonification and ST 36 (zusanli) for Qi tonification. c. Xiaoke down: Yin syndrome – deficient kidneys. Clinical manifestations: frequent urination, profuse and cloudy (oily), red tongue without a membrane, lower body and knees weak, black face, dizziness, blurred vision and dry mouth. Therapeutic points: BL- 23 (Shenshu), KI -3 taixi (renal organ tonification), SP-6 (yin tonification) sanyinjiao, and CV- 4 yin tonification (Guanyuan). (Aribowo, 2012) 3.6. The Effect of Golden Sea Cucumbers for Diabetes Patients Golden Sea cucumbers contain antioxidants, triterpenoids (a type of compound that can slow the growth of cancer cells and chondroitin sulfate which treats inflammation and slows aging. Golden sea cucumbers contain triterpene glycosides (saponins), phenolics, and

chromium minerals. Saponins play a role in increasing phosphorylation of tyrosine from the subunit of the receptor insulin, inhibits tyrosine phosphatase, and stimulates glucose transport activities, such as GLUT4. Phenolics can stimulate increased insulin secretion from pancreatic beta cells and provide protection against cell damage caused by oxidative stress associated with free radicals, while chromium can increase the number of insulin receptors, so that the binding between insulin and cells increases, inhibits protein tyrosine phosphatase 1 and activates insulin receptor tyrosine kinase (IRTK).(Safitri, 2019) blood sugar levels for 4 weeks, both those taking diabetes medications and those not taking diabetes medications. In addition, there was a decrease in diabetes symptoms experienced by patients in both group 1 and group 2 for 4 weeks. The greatest antioxidant is in the Golden Sea Cucumber (Golden stichoupus variegatus) with the help of Glutathione, giving electrons to free radicals capable of suppressing beta cell damage in the pancreas in diabetic patients. (Cahyati, 2018). Sea cucumbers contain cell growth factor (CGF). This CGF is responsible for stimulating the process of cell regeneration or rejuvenation and plays a role in accelerating wound healing in beta cells in the pancreas and accelerating wound closure in people with diabetes. (VoaIslam, 2019). Xiaoke sufferers are caused by the condition of San Jiao being attacked by internal heat, causing a fluid balance disorder in the body related to the cause. This causes endocrine metabolic abnormalities that have an effect on insulin secretion (Dewi, 2018). Better reduction in blood glucose levels can result in greater insulin sensitivity. IV. Conclusion There was a decrease in blood sugar levels and symptoms of diabetes in diabetic patients during 4 weeks of therapy, who were given sea cucumber therapy and acupuncture as an alternative treatment. References Adrian, Kevin. 2018 Mengolah Manfaat Teripang Jadi Camilan dan Obat-obatan. https://www.alodokter.com/mengolah-manfaat-teripang-jadi-camilan-danobat-obatan Adriansyah, Kamaludin,Theodorus,Sulastri.2014. Efek Hepatoprotektif Teripang Emas (Stichopus variegatus) pada Tikus Jantan Dewasa Galur Wistar yang Diinduksi Parasetamol Dosis Toksik. Palembang. MKS,Th.46 No. 2, April 2014 Akupuntur Holistic. 2016. Pengobatan Diabetes dengan Metode Akupuntur. Jakarta. http://akupunturholistic.net/2016/01/08/pengobatan-diabetes-denganmetode-akupuntur/ Allert, B.2018.Berapa Kadar Gula Normal pada Tubuh ? Alodokter. https://www.alodokter.com/berapa-kadar-gula-darah-normal-pada-tubuh (9 Maret 2018) Amalia, Anindini W. dan J. S.Setiawan. 2019. Efektivitas Kombinasi Terapi Akupuntur dan Rebusan Teh Hijau dalam Menurunkan Kadar Glukosa pada Pasien Diabetes Tipe 2. CHM-K Applied Scientific Journal Volume 2 Nomor 2, April2019 Ambari,M. 2018. Teripang, Si Buruk Rupa dari Perairan Dangkal yang Bernilai Ekonomi Tinggi. https://www.mongabay.co.id/2018/03/05/teripang-si-burukrupa-dari-perairan- dangkal-yang-bernilai-ekonomi-tinggi/ Aribowo.2012. Diabetes TCM (Klinik Alang-alang). https://klinikalangalang. blogspot.com/2012/01/diabetes-tcm-xiao-ketang-niao-bing.html Boy. 2015. Belajar Akupunktur : Diabetes Mellitus. Surakarta: Politeknik Kesehatan Surakarta. https://terapisakupunktur.blogspot.com/2015/12/ diabetes-mellitus.html Cahyati, M., Priska A.,N. Kusuma, S.Azzahra. 2018. Pemanfaatan Antioksidan (Glutathione) Teripang Emas Laut (Golden Stichoupus Variegatus) Berbasis Nanoteknologi dalam Apoptosis Sel Skuamosa Kanker Mulut. Malang: EProdenta Journal of Dentistry. 2018. 2(2): 149-154 Dewi, Kartika.2012. Peranan Pengobatan Dengan Akupunktur Pada Diabetes Mellitus Dalam Era Globalisasi. Bandung: Zenit Vol.1/No.2/Agust 2012, hal.73-81, ISSN 2252-6749 http://repository.maranatha.edu/ 3371/1/Peranan% 20Pengobatan dengan Akupunktur pada Diabetes Mellitus dala m Era Globalisasi.pdf 104 Diamond Interest International. 2020. Di Sea Cucumber Jelly Gamat (Sirup Teripang Emas). Surabaya: Diamond Interest

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Clinical Observations of Golden Seachers (Stichopus Variegatus) and Acupuncture in Diabetes Mellitus Patients

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Abstract

Indonesia is the largest archipelagic country in the world which has 17,504 islands with a coastline length of 81,000 km with an area of marine waters of about 5.8 million km2 (75% of the total area of Indonesia), stretching on the equator, causing Indonesia to have abundant biological resources. rich and diverse both for landand sea areas, so it is known as a mega biodiversity country(Karnila, 2020). This biological wealth needs to be utilized as well as possible for the welfare of the Indonesian people. One of the marine products that have important economic value is sea cucumber or also called sea cucumber, teat fish and sea ginseng. This type of research is quantitative research using a quantitative design with experimental research with aapproach quasi-pretest- posttest control design. There was a decrease in blood sugar levelsand symptoms of diabetes in diabetic patients during 4 weeks of therapy, who were given gold sea cucumber treatment therapy and acupuncture as an alternative treatment.

Keywords
clinical observation; golden sea cucumber; acupuncture in diabetes mellitus patients.

I. Introduction

Indonesia is the largest archipelagic country in the world which has 17,504 islands with a coastline length of 81,000 km with an area of marine waters of about 5.8 million km2 (75% of the total area of Indonesia), stretching on the equator, causing Indonesia to have abundant biological resources rich and diverse both for land and sea areas, so it is known as a mega biodiversity country (Karnila, 2020). This biological wealth needs to be utilized as well as possible for the welfare of the Indonesian people. One of the marine products that have important economic value is sea cucumber or also called sea cucumber, teat fish and sea ginseng.

Agricultural land is increasingly narrow due to the shifting of the function of agricultural land into industrial areas, so that hydroponic cultivation is considered appropriateto utilize available land because this cultivation system does not require soil media. The hydroponic system uses a variety of planting media other than soil, among others, with mediasuch as fuel husk, husk, sand, zeolite, rockwoll, peat (peat moss) and coconut husk powder (Prihmantoro in Zalilani, M. et al. 2019)

Sea cucumbers are easily found in the Asia Pacific Ocean, especially in Indonesia. Sea cucumbers are bottom feeders, which are creatures that live from eating organisms on the seabed. The sea cucumber will absorb the sea sand, then in its stomach, the organic matter is absorbed, releasing the clean sand again. Such capabilities make coastal sediment areas and coral reefs loose. The effect there will be many creatures, there will be a lot of fish and therefore called sea cucumbers. If there is no sea cucumber, the sediment is not loose, there isnot much organic matter, and the fish are reduced. (Wirawan, 2018)

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Degenerative diseases are caused by a process of decreasing organ function which generally occurs in old age. This disease has many varieties and symptoms and often affects people in general. So that the existence of an expert system to diagnose degenerative diseases is the right step so that people can diagnose their disease early without the help of a doctor. Decreased cell function can also occur in degenerative diseases. But what is meant by degenerative disease here is a premature decline in cell function. Degenerative diseases can be prevented by minimizing the risk factors that cause it. The main risk factors for degenerative diseases are unhealthy eating patterns, lack of physical activity, cigarette consumption, and increased stress and exposure to the causes of degenerative diseases. Over time, everyone must experience a change or regeneration of cells in their body. Naturally, the body's cells also experience a decline in function due to the aging process. In addition, socio- economic changes and appetite will result in changes in people's eating patterns that tend to distance themselves from the concept of a balanced diet, thus having a negative impact on health and nutrition. A diet high in saturated fat and sugar, as well as low in fiber and low in micronutrients will cause problems of obesity, over nutrition, and increase free radicals whichultimately result in changes in disease patterns from infectious to non-infectious chronic diseases or the emergence of degenerative diseases. Therefore, with the increasing life expectancy of Indonesian people, the incidence will increase and become an importantdisease; moreover often cause sudden death. According to Handajani, et al (2010), thepercentage of deaths from degenerative diseases can be shown in Figure 1.1

Figure 1.1 Percentage of deaths from degenerative diseases 15 years based on ENMD (Endocrine, nutritional, and metabolic disease = hormonal, nutritional, and metabolic disorders), DCS (Disease of Circulatory System = diseases of the heart and circulatory system) and non (ENMD + DCS) (Handajani, et al, 2010)

One indicator of the condition of diabetes mellitus (DM) is high blood glucose levels due to low insulin secretion or reduced insulin receptor sensitivity. Diabetes mellitus is a degenerative disease that occurs when a disorder of carbohydrate metabolism, namely the pancreas is unable to produce insulin or the sensitivity of cell receptors to insulin is very low because insulin takes glucose from circulating blood so that blood glucose levels are high followed by high HbA1c (glycated hemoglobin) results. According to WHO (2016), the number of DM sufferers in the lower middle group with a total population of 258 million people in Indonesia is 6%, cancer patients are 13%, and respiratory tract sufferers are 5% of the total population. Diabetes mellitus causes an increase in oxidative stress caused byreactive oxygen species (ROS) as free radicals.

The golden sea cucumber (Stichopus hermani) is a type of sea cucumber that is rich in antioxidants. It contains glycosaminoglycans, such as heparan sulfate and chondroitin sulfate, which are beneficial for human health. In general, sea cucumbers have good nutritional value for humans, such as protein, niacin, riboflavin, chondroitin sulfate, coelomic fluid, palmitic, stearic and linoleic acids, squalene, to triterpenoids. Further research is still needed to truly

ascertain the potential of this golden sea cucumber which can have a major impact on human health.

Although there is no valid research, but golden sea cucumbers are also believed to be able to help prevent diabetes, as much as 86.8% of Sara gold sea cucumbers will contain protein. This of course makes golden sea cucumbers beneficial for diabetics because the protein content is considered capable of controlling blood flow in the body.

Basically, complications that occur in DM patients are the result of the formation of ROS. The most important management of type 2 diabetes mellitus is controlling blood sugar levels, because it plays a very important role in preventing complications. It is currently believed that oxidative stress plays an important role in the development of vascular complications in diabetes, in particular type 2 diabetes mellitus. Strict glycemic control is a top priority in the management of diabetes, but in reality only a small proportion of patients achieve long-term glycemic targets. Based on this phenomenon and the characteristics of the progressive course of type 2 diabetes mellitus, a new strategy that is earlier and more aggressive in the long term use of hypoglycemic drugs is currently being used. Therefore, the discovery of new drugs that are able to control glycemic conditions and include reducing the occurrence of ROS due to type 2 diabetes mellitus must be further enhanced, especially the use of natural ingredients as part of nutrigenomic therapy.

Indonesia is an archipelagic country and golden sea cucumbers are marine animals that are very much found in Indonesian waters. The golden sea cucumber (Sticopus hermanii) contains many bioactive compounds, including triterpene glycosides (saponins), phenolics, and chromium minerals. It also contains a variety of vitamins and minerals that have anti- oxidant activity. Saponins play a role in increasing tyrosine phosphorylation of the subunit of the receptor insulin, inhibiting tyrosine phosphatase, and stimulating glucose transport activities, such as GLUT4. Phenolics can stimulate an increase in insulin secretion from pancreatic beta cells and provide protection against cell damage caused by oxidative stress associated with free radicals, while chromium can increase the number of insulin receptors,so that the bond between insulin and cells increases, inhibits protein tyrosine phosphatase 1 and activates insulin. receptor tyrosine kinase (IRTK). Based on the content contained in goldsea cucumbers mentioned above, it is hoped that gold sea cucumbers can be used as a treatment for type 2 diabetes mellitus. 4 in a rat model of Diabetes Mellitus given the extract of the golden sea cucumber (Sticophus hermanii)". The aim is to prove that gold sea cucumber extract can reduce blood sugar levels and increase skeletal muscle GLUT4 levels (examined by ELISA) in a rat model of type 2 diabetes mellitus. This study is a laboratory experimental study, with a completely randomized design. Thirty Wistar rats were randomly divided into five groups. Group 1 is a negative control group (normal rats), and groups P2 – P4 are wistar rats with type 2 diabetes mellitus by administering STZ 50 mg/kg BW by i.p. Group P2 is a positive control group (without giving anything), P2 are the group given metformin 100 mg/kg BW (the first line drug for type 2 diabetes mellitus), groups 4 and 5 arethe group given the golden sea cucumber extract at a dose of 8.5 mg/kg BW and 17 mg/kg BW. The duration of administration of metformin and golden sea cucumbers was for 2weeks, then the experimental animal wistar rats were sacrificed to measure their blood sugar levels with Nesco multicheck sticks and muscle GLUT4 levels using the elisa method. The results of this study were 1) The blood sugar levels of rats model of type 2 diabetes mellitus decreased significantly, with the administration of sea cucumber extract doses of 8.5 mg/kg BW and 17 mg/kg BW and gave the same effect as the administration of metformin 100 mg/kg BW, 2) The muscle blood sugar level of the rat model of type 2 diabetes mellitus increased significantly, with the administration of golden sea cucumber extract at doses of 8.5

mg/kg BW and 17 mg/kg BW and gave the same effect as the administration of metformin 100 mg/kg BW, 3)) Glutathione levels 4 mice model diabetes mellitus type 2 increased significantly, with the administration of gold sea cucumber extract doses of 8.5 mg/kg BW and 17 mg/kg BW and gave the same effect as the administration of metformin 100 mg/kg BW. The conclusion of this study is that administration of golden sea cucumber extract at a dose of 8.5 mg/kg BW or 17 mg/kg BW in rat's model of type 2 diabetes mellitus gave statistically the same effect as the administration of metformin 100 mg/kg BW, only it seems that the dose of 8.5 mg/kg BW gives a better effect. (Safitri, 2019)

In addition to healing methods with herbs and traditional medicines, the acupuncture method is also one of the natural ways to cure diabetes which is often used to help lower blood sugar levels. Acupuncture is a traditional medical technique originating from mainland China. Some of the symptoms that arise in diabetes, according to experts in traditional Chinese medicine, are caused by an imbalance in the flow of energy (Qi) in the body, which then triggers an increase in blood sugar levels. In order for blood sugar levels to return to normal, it is necessary to take an action to regulate blood circulation and energy (Qi) and balance organ functions to improve pancreatic function and cell sensitivity to insulin. The method of healing with the acupuncture method is by inserting small needles into points on the body. The goal is to reactivate the body's energy flow so that the energy imbalance that occurs can be overcome. Thus, the body will be able to perform performance in a way that returns to normal. Acupuncture points are located on the stomach, spleen, kidneys and can be in the ears. The needle implanted at a certain point triggers the work of the pancreas which produces insulin so that blood sugar levels can be controlled. This acupuncture method is very beneficial for diabetics because it has no side effects. (Susanawati, 2014)

Acupuncture has been widely used in the treatment of diabetes and its complications in China. Acupuncture therapy is effective for diabetes and its complications, such as diabetic gastroparesis, diabetic peripheral neuropathy). In the treatment of diabetes, acupuncture therapy shows the main effects related to blood glucose control, weight loss, maintaining the function of the pancreas, improving insulin resistance and normalizing hormone levels namely melatonin, insulin, glucocorticoids and epinephrine. (Amalia, et al, 2019) The purpose of this study was to determine the value of the content of gold sea cucumbers and acupuncture in patients with diabetes mellitus from clinical observations.

II. Review of Literature

Type of research is a quantitative research using a quantitative design with aexperimental research with aapproach quasi-pretest-posttest control design. The sample size used was 12 people who received acupuncture and gold sea cucumber treatment. Exclusion criteria in this study were respondents with acute, chronic diabetes mellitus, obesity, had complications of severe disease such as kidney failure and heart disease, etc., had major injuries to other body parts such as hands, feet, back, etc. The acupuncture points used in this study were SJ-5 (Waiguan), Zunsalin (ST36), sanyinjiao (SP6), Hegu (LI4), Quchi (LI11) and Tai chong (LR3) points. According to Holistic Acupuncture (2006), some points that are often used are zusanli (St-36), sanyinjiao (Sp-6), guanyuan (CV-4), taixi (KI-3), zhongwan (CV-12), geshu (BL-17), quchi (LI-11), hegu (LI-4), shenmen (HT-7), waiguan (SJ-5), fuliu (KI-7). These acupuncture points have been used both in America and in other countries in the world for the treatment of diseases such as: sugar, hypertension (high blood pressure), pinched nerves, stroke, stomach, diabetes, infertility. obesity, heart, insomnia, frequent dizziness, obesity, pinched nerves, erectile dysfunction / premature ejaculation due to stress, rheumatism, migraine, kidney, gout, Bell's Palsy, Tinnitus. The acupuncture points used in

this study were selected based on various scientific studies of acupuncture for the management of patients with type 2 diabetes mellitus with its complications. The patient was stabbed with acupuncture needle stimulation using a TDP lamp for 30 minutes. Therapy at the Zusanli acupuncture point alone, showed no statistically significant effect of acupressure at the Zusanli point on fitness (V02max) and blood sugar levels in patients with diabetes mellitus II who received oral anti-diabetes. It is recommended to do further research using acupressure with a combination of several acupuncture points and a longer treatment time. (Fihayati, 2012) For severe thirst, add Liangquan (CV 12), for hunger prick immediately aftereating on Zhongwan (CV 12), for ulceration in the mouth add Tongli (HT 5), Hegu (Fact Sheet 4) and Zhaohai (KI 6), for blurred vision add Yanglao (SI 6) and Guangming (GB 37).

The acupuncture method used is based on Jiao's syndrome consisting of upper burner, middle burner and lower burner. The upper burner strengthens the lungs, strengthens yin and dissipates heat at the Chize (LU5), Liangquan (CV23), Zusanli (ST36), Taixi (KI3), Yuji (LU10) points. Middle burner dissipates gastric heat and strengthens yin. at the points of Sanyinjiao (SP6), Zusanli (ST36), Neiting (ST44), Taixi (KI3), Zhongwan (CV12). The lower burner strengthens kidney function and nourishes jing at the points of Guanyuan (CV4), Sanyinjiao (SP6), Taixi (KI3), Jingmen (GB25), Rangu (KI2), Qihai (CV4). The strengthening method, carried out every two days with a TDP lamp, for example, was left 30 minutes at the reflection point or the point of the pancreatic reflex zone, such as Yinlingquan (SP9), Diji (SP8), and Sanyinjiao (SP6), Jianli (CV11), and Zhongwan (CV12).). Needle left for 30 min, or in combination with moxibustion after needleing. Acupuncture is given once a day or once every 2 days, for 3 months. According to Zhan et al. from Jiangxi, China reported in 14 cases with mild and moderate NIDDM treated only with acupuncture at the Zusanli point (ST36), 7 cases showed excellent results, 3 cases improved and 1 case was ineffective. Mean fasting blood sugar (12.66 ± 0.67) mmol/L before treatment and dropped to(7.72 ± 0.39) mmol/L after treatment. Experimental diabetic rats were divided into 3 groups, Electro Acupuncture (EA) group (n=8), TENS group (n=8), stabbing on Zusanli (ST36) for 20 minutes once every 2-3 days for 5 weeks, and 1 group without treatment (DM group, n=6) respectively. In comparison with the DM group, the increase in plasma glucose levels was significantly lower in the EA group (p0.05) over 6 weeks, and the symptoms of polyphagia, polydipsia and polyuria were reduced in the EA group. (Dewi, 2012) Tianshu ST-25, the Mu-front point of the LI meridian, is located on the ST meridian, and therefore the Qi from the LImerges and concentrates in the front position of the body. Location: 2 cun lateral from the umbilicus (navel). The close relationship between the ST and the intestine is noted in thebook "Spiritual Pivot" which states, "The small intestine and large intestine are related to the ST."

Furthermore, the ST organs are related externally and internally to the SP organs, which dominate transport and transformation, playing an important role in regulating the gut. (Elvida, 2011) Overweight and obesity are two different but related things. Usually patients with diabetes mellitus are overweight. Overweight is excess body weight compared to the ideal weight caused by the accumulation of fat or non-fat tissue. Factors that can affect overweight include: genetics, environment, diet, psychology and physical activity. Parameters to determine overweight is to perform an anthropometric examination which includes measurements of height and weight as well as waist circumference. According to TCM obesity is related to the overweight category called Fei Pang or Tan Yin which means fat is caused due to dysfunction of the spleen and kidney, leading to the accumulation of phlegm and dampness in the body.

In this overweight case study, the patient had Qi stagnation syndrome and blood stasis. Acupuncture point therapy at the tianshu (ST25), zusanli (ST36) and zhong (CV17) and taichong (LV3) points serves to activate Qi and blood circulation and eliminate blood stasis. (Erma, 2016)

III. Result and Discussion

3.1. Acupuncture for Diabetics Diabetic

Syndrome (Xiaoke) according to eastern medicine includes heat in the lungs, excess gastric fire, qin deficiency and spleen yin deficiency, kidney yin deficiency and yin and yang deficiency. The points used in diabetes cases were Sanyinjiao (SP 6), Yinlingquan (SP 9), Quchi (Fact Sheet 11), Zhongwan (CV12), Zusanli (ST 36) and Fenglong (ST 40). (Boy, 2015) Acupuncture uses needles to stimulate specific points on the body to improve energy flow and balance along energy pathways (meridians). Traditional medicine acupuncture sees the human body as an energy flow system, when the energy flow is balanced, the body is healthy. Acupuncture is associated with energy imbalances, such as "yin deficiency". The terms “yin” and “yang” describe opposing energies that should remain in balance. Yin-Yang is relative. Under certain circumstances, Yin can turn into Yang, and vice versa. Yin andYang are interdependent, limiting, and always in a state of dynamic change to ensure their balance (homeostasis). Therefore, the Yin-Yang principle explains physiological functions and pathological changes, as well as guides in therapy and diagnosis. According to Lumbar (2020), the stabbing effect on acupuncture treatment occurs through nerve conduction. In general, the stabbing effect is divided into: local effects, segmental effects and central effects.

3.2. Local Effects

Acupuncture needle insertion causes small/micro-injury to the tissue which causes the release of tissue hormones (mediators) and causes a biochemical chain reaction. This reaction can be seen from the redness of the puncture site. Locally occurring effects include capillary dilatation, changes in the interstitial environment, activation of nonspecific immune responses, increased capillary permeability, stimulation of nociceptors, and leukocyte and Langerhans cell withdrawal.

3.3. Segmental/Regional Effects

The action of acupuncture stimulates nerve fibers and is transmitted from the spinal cord segment to other nerve cells. Thus, it is stated that this segmental effect affects adjacent spinal cord segments.

3.4. Central Effect

Stimuli that reach the spinal cord are then transmitted to the central nervous system via the brain stem, gray matter, hypothalamus, thalamus and cerebrum. Thus, stabbing canrelieve pain symptoms, activate the body's defense mechanisms, thereby restoring homeostasis.

In the human body there are energy channels that have certain patterns in all parts and surfaces of the body. These energy channels, also known as meridians, can be thought of as an irrigation system that energizes the body's tissues. If there is an obstacle in its movement, it is like a dam that inhibits the flow rate to the next side. The meridians can be affected by their performance using punctures at acupuncture points, which then remove the blockages in the energy dam and restore proper flow. According to Lumbar (2020), the advantages of

acupuncture include: safe and natural, effective in reducing patient complaints, cheap and rational. Safe and natural means not using chemicals that can damage the body. Effectively reducing patient complaints means reducing taste all body aches, eliminate dependence on chemical drugs, heal allergies, even mentioned can also be an alternative treatment for degenerative sufferers. In addition to treating physical ailments, mental stress can also be cured through acupuncture. Treatment with this method can be soothing, especially when combined with treatment using other methods. This is why acupuncture can also be called a way of calming the mind. While cheap means only using a tool in the form of a sterile needle that is inserted at a certain point of the body. Without drugs that contain chemicals, or herbal concoctions. In addition, rational means that acupuncture is an alternative treatment. Because it uses sharp objects that are stabbed at certain points on the skin, there are some people who feel a side effect of acupuncture, namely a little pain because of the low pain threshold. Also feel stiff or tingling when the acupuncture needles are inserted. There may also be a few drops of blood when the needle is removed because the acupuncture points are close to large veins. In some very rare cases, recipients of acupuncture treatment methods feel dizzy or nauseous during acupuncture. To minimize side effects that may arise, you should not drink drinks that contain alcohol if you have planned to receive acupuncture treatment. For women, also make sure that you are not pregnant at the time because there are some acupuncture points that should not be stimulated during pregnancy so as not to cause a miscarriage. (Lumbar, 2020)

There are 4 symptoms of Xiaoke (diabetes), namely increased appetite, sufferers always want to drink (increased thirst), a lot of urine (increased fluid expenditure), and reduced body weight. Xiaoxia syndrome is divided into three, upper, middle, and lower xiao. Including the top xiao if the dominant symptom is a lot of drinking. It is categorized as middle xiao if the dominant symptom is eating a lot, lower xiao if the dominant symptom is a lot of urination. If all symptoms are dominant, all categories are included. Upper xiaoke syndrome occursbecause of disorders of the lungs, middle xiaoke due to disorders of the spleen and stomach, and lower xiaoke due to kidney disorders. According to Dr. William, the factor that causes xiaoke is a lack of yin in the kidneys, lungs, spleen, and stomach, so that these organs are likeburning and consequently draining fluids (xiaoke). Symptoms of excessive thirst, drinking a lot, frequent urination, weakness, red tongue tip, yellow thin webbed tongue, fast and strong pulse, for example, are manifestations of poor lung function. Symptoms of hunger, increased appetite, thin body, constipation, dry tongue, thirst, frequent drinking and urination are also manifestations of heat and fire in the stomach which causes digestion to work faster than usual. Therefore, the stomach is also the target of Xiaoke's treatment. (Herbalchina, 2011) There are groups of acupuncture points to achieve balance goals, namely stimulating endocrine organs combined with dominant points and specific organ points. For the test to stimulate the pancreas in xiaoke, the back shu point (Pishu BL11), Yuan point (Taibai SP 3) and Zusanli point (ST 36) for the upper jiao (abdomen) were used. Endocrine includes pancreatic beta-cells. Stimulation of diabetes mellitus at the Taibai, Pishu and Zusanli acupuncture points, is a direct strengthening of the soil organs (spleen-stomach) namely segmental and general organ stimulation towards the center to affect the Pancreas-Beta-cell organ functionally. (Saputra, 2002)

3.5. Symptoms of Xiaoke (Diabetes)

Xiaoke is a collection of aspects of symptoms that arise in a person caused by an increase in blood glucose (blood sugar) levels due to insulin deficiency, both absolute and relative. (Aribowo, 2012). Higher blood sugar levels will damage body tissues and cause complications in blood vessels. The higher the blood sugar level, the more often you urinate

(polyuria), often feel thirsty (polydipsia), also eat a lot / often get hungry (polyphagia) and the higher the postprandial hyperglycemia level, which means the risk of cardiovascular disease increases. Postprandial hyperglycemia is a blood sugar level two hours after eating that exceeds the normal value (200 mg/dL). (Aribowo, 2012) The following is the range of normal blood sugar levels in the body:

a. Before meals: about 70-130 mg/dL
b. Two hours after eating: less than 140 mg/dL
c. After not eating (fasting) for at least eight hours: less than 100 mg/dL
d. At bedtime: 100 – 140 mg/dL (Allert, 2018)

Xiaoke syndrome is divided into 3 namely upper xiaoke, middle xiaoke, lower xiaoke, also spleen organ qi-xu syndrome (related to xiaoke), liver Qi stagnation (related to xiaoke).

a. Xiaoke above is fire/heat lung syndrome. Clinical manifestations: often feel thirsty (polydipsia), dry mouth and tongue, red tongue, especially at the tip of the tongue with a yellow coating. The therapeutic points are BL13 (Feishu), LU 5 (Chize) for heat elimination, SP-6 (sanyin jiao) for yin tonification and ST-36 (Zusanli) Qi tonification.
b. Middle Xiaoke is gastric fire/heat syndrome. Clinical manifestations: frequent thirst (polydipsia), frequent hunger (polyphagia), epigastric pain, constipation and dry defecation. The therapeutic points are Pishu (BL20), Zhongwan (CV 12) (front mu pointof the stomach), neiting point (ST 44) for heat elimination in the gastric meridian),sanyinjiao point (SP 6) for Yin tonification and ST 36 (zusanli) for Qi tonification.
c. Xiaoke down: Yin syndrome – deficient kidneys. Clinical manifestations: frequent urination, profuse and cloudy (oily), red tongue without a membrane, lower body and knees weak, black face, dizziness, blurred vision and dry mouth. Therapeutic points: BL- 23 (Shenshu), KI -3 taixi (renal organ tonification), SP-6 (yin tonification) sanyinjiao, and CV-4 yin tonification (Guanyuan). (Aribowo, 2012)

3.6. The Effect of Golden Sea Cucumbers for Diabetes Patients Golden

Sea cucumbers contain antioxidants, triterpenoids (a type of compound that can slow the growth of cancer cells and chondroitin sulfate which treats inflammation and slows aging. Golden sea cucumbers contain triterpene glycosides (saponins), phenolics, and chromium minerals. Saponins play a role in increasing phosphorylation of tyrosine from the subunit of the receptor insulin, inhibits tyrosine phosphatase, and stimulates glucose transport activities, such as GLUT4. Phenolics can stimulate increased insulin secretion from pancreatic beta cells and provide protection against cell damage caused by oxidative stress associated with free radicals, while chromium can increase the number of insulin receptors, so that the binding between insulin and cells increases, inhibits protein tyrosine phosphatase 1 and activates insulin receptor tyrosine kinase (IRTK).(Safitri, 2019) blood sugar levels for 4 weeks, both those taking diabetes medications and those not taking diabetes medications. In addition, there was a decrease in diabetes symptoms experienced by patients in both group 1 and group 2 for 4 weeks. The greatest antioxidant is in the Golden Sea Cucumber (Golden stichoupus variegatus) with the help of Glutathione, giving electrons to free radicals capable of suppressing beta cell damage in the pancreas in diabetic patients. (Cahyati, 2018). Sea cucumbers contain cell growth factor (CGF). This CGF is responsible for stimulating the process of cell regeneration or rejuvenation and plays a role in accelerating wound healing in beta cells in the pancreas and accelerating wound closure in people with diabetes. (VoaIslam, 2019). Xiaoke sufferers are caused by the condition of San Jiao being attacked by internal heat, causing a fluid balance disorder in the body related to the cause. This causes endocrine metabolic abnormalities that have an effect on insulin secretion (Dewi, 2018). Better reduction in blood glucose levels can result in greater insulin sensitivity.

IV. Conclusion

There was a decrease in blood sugar levels and symptoms of diabetes in diabetic patients during 4 weeks of therapy, who were given sea cucumber therapy and acupuncture as an alternative treatment.

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