THE STUDY OF OIL PULLING IN ALLERGIC PATIENTS BY LIVE BLOOD ANALYSIS

PHRUKSA PAISILP

MASTER OF SCIENCE
IN
ANTI-AGING AND REGENERATIVE SCIENCE

SCHOOL OF ANTI-AGING AND REGENERATIVE MEDICINE
MAE FAH LUANG UNIVERSITY
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INDEPENDENT STUDY COMMITTEE

V.P.
.....CHAIRPERSON
(Prof. Dr. Vichit Punyahotra)

.....ADVISOR
(Lecturer Surapong Lookhanumanjao)

Theeraporn Puntheeranurak
.....EXTERNAL EXAMINER
(Assoc. Prof. Dr. Theeraporn Puntheeranurak)

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Independent Study Title The Study of Oil Pulling in Allergic Patients by Live Blood Analysis

Author Phruksa Paisilp

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Advisor Lecturer Surapong Lookhanumanjao

ABSTRACT

Background: Allergic rhinitis is the disease more common in Thailand. The information are found that allergy has increased the incidence of allergy in respiratory system. Oil pooling has its origins in Ayurvedic medicine of India to suck the toxins by oil gargling the oil in your mouth for 10-15 minutes then spit out should do it every day after you wake up because of this time has highest bacteria in the mouth. This research will study the effect of the oil pooling that can decrease the tendency and symptoms in allergy patients by live blood analysis. This technique were done by bleeding the fingertip 1-2 drops, then use of high-resolution dark field microscopy again to observe the rouleau formation, white blood cell activity, plaque formation and crystal formation by looking through dark field microscope.

Objective: To study the result of oil pulling in allergy patients by live blood analysis technique and compare the tendency and allergy symptoms before and after doing oil pulling.

Method: Before and after oil pulling the 32 patients were assessed the level of allergy symptoms by questionnaire and collected saliva sample for pH test. Next, they

were assessment live blood analysis. Then the patients starting to do oil pulling by gargling the virgin coconut oil about 1 tablespoon after wake up 10-15 minutes continue to do it every day until completely 1 month.

Result: The statistical analysis of the data for compared allergic symptoms before and after oil pulling show that after oil pulling has significant difference to decrease the allergic symptoms than before oil pulling. While white blood cell activity has significant difference than before oil pulling as well.

Conclusion: The result from live blood analysis that show white blood cell activity indication that oil pulling can decrease the allergic symptoms.

Keywords: Oil Pulling/Allergic Rhinitis/Live Blood Analysis

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CHAPTER 1

INTRODUCTION

1.1 Background and Rationale

Allergic rhinitis is the disease more common in Thailand and other countries around the world. The information are found that allergy has increased the incidence of allergy in respiratory system. The common reasons respiratory allergies increasing in Thailand because of a lifestyle change especially in urban which the population has increased, the residents crowded, unhygiene, poorly ventilated air etc. all of these are breeding and accumulation of allergens. The Statistics from The Allergy, Asthma, And Immunology Association of Thailand show that the people of Thailand about 10 million are sick from allergic rhinitis estimated for 20% in adults and 40% in children. When the air humidity it will cause the spread of virus and bacteria quickly especially in group respiratory diseases. The most common symptoms are sneezing, runny nose, coughing itchy eyes, stuffy nose or itchy mouth, throat, ears, and face. These chronic symptoms happen throughout the year to interfere the daily life and may cause complications to develop into a severe disease such as sinusitis. Furthermore the infection may spread to cause allergies to others as broadly as well.

Oil pooling has its origins in Ayurvedic medicine of India to suck the toxins by oil gargling the oil in your mouth for 10-15 minutes then spit out should do it every day after you wake up because of this time has highest bacteria in the mouth. This simple method had effectively result of oil pulling can be done in every people, any age, it was unnecessary to use surgery and drugs which cause side effects. Since bacteria can enter the body through the mouth highest as possible with foods that we eat every day. Thus in the mouth full of many microorganisms such as bacteria, virus, fungi and protozoa but most bacteria that lived in. The main reasons that bacteria living in the mouth

because there are high moisture, appropriate temperature, food scraps which is fed to those bacteria for growth and multiply population. Bacteria can spread throughout the mouth for example the teeth under the gums, palate, tongue etc.

So this research will study the effect of the oil pooling that can decrease the tendency and symptoms in allergy patients by live blood analysis. This technique were done by bleeding the fingertip 1-2 drops, then use of high-resolution dark field microscopy again to observe the rouleau formation, white blood cell activity, plaque formation and crystal formation by looking through dark field microscope. This technique can indicate the primary condition of the body systems including the digestive system, liver function, immune system, lack of vitamins and some minerals conditions, the balance of sex hormones in the body, free radicals in the blood and the function of the white blood cells etc. An indication of the tendency and degenerative condition refer to the body recovery and treatment planning in health care further.

1.2 Research Objectives

1.2.1 To study the result of oil pulling in allergy patients by live blood analysis technique.

1.2.2 To compare the tendency and allergy symptoms before and after doing oil pulling.

1.3 Research Hypothesis

Oil pulling has ability to decrease the tendency and symptoms in allergy patients.

1.4 Scope of Research

1.4.1 Population: The patients age 20-45 years, both male and female in Bangkok.

1.4.2 Sample: The patients male and female who have case history of allergy symptoms.

1.5 Expected Benefits

1.5.1 The patients who suffer from allergy symptoms get better health after do oil pulling.

1.5.2 To improve oral health.

1.5.3 To put home oral hygiene and preventive health.

1.6 Conceptual Framework

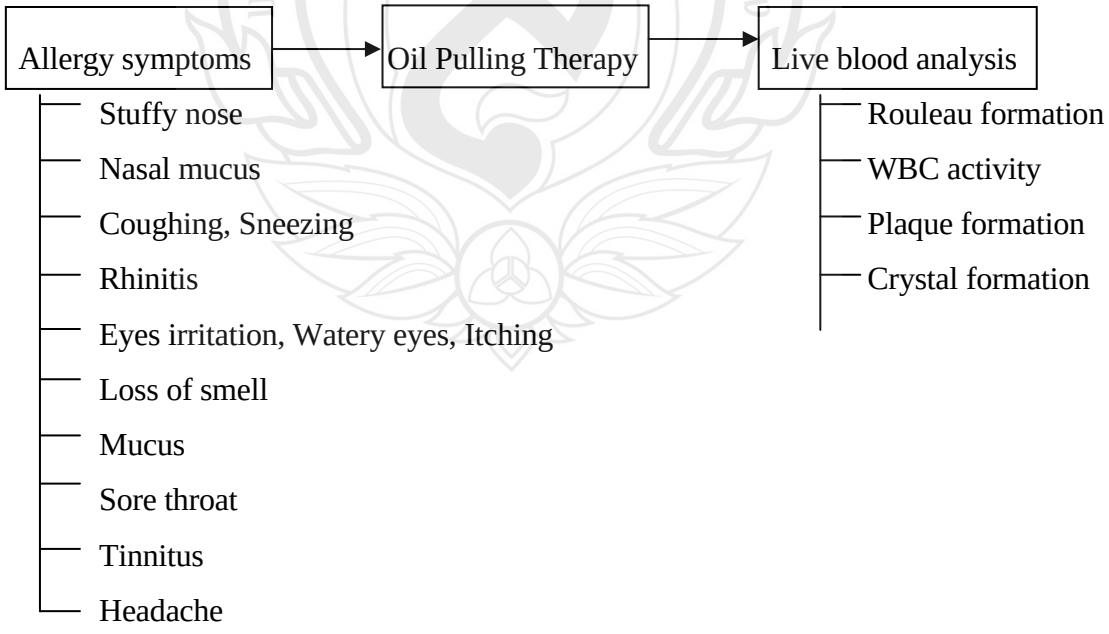

Figure 1.1 Conceptual Framework

1.7 Terms and Definition

1.7.1 Oil pulling therapy

Oil pulling is the process swishing oil in their mouth for oral health and protect overall health. This process is typically performed daily by sucking oil through their mouth and pulling it between the teeth for 1-10 minutes before brushing (Thaweboon, Nakaparksin & Thaweboon, 2011).

1.7.2 Allergic Rhinitis (AR)

The term rhinitis refers to a heterogenous group of nasal disorders characterized by one or more of the following symptom: Sneezing, itching, nasal congestion and rhinorrhea. Rhinitis can be caused by allergic, non-allergic, infectious, hormonal, occupational and the other factors. Severe AR has been associated with diminished quality of life, disordered sleep, obstructive sleep apnea and impairment in work performance (Shariat et al., 2012).

1.7.3 Live blood analysis (LBA)

Live blood analysis is carried out through visual examination of a small droplet of fresh capillary blood, typically taken from the fingertip, and observed under a high-powered light microscope, either dark-field or phase contrast. This method offers a qualitative visual perspective of the blood cells and state of the blood plasma at high magnification enhanced by modern optical techniques. It offers a visual perspective on the ecology of the blood (Rubik, 2010).

CHAPTER 2

LITERATURE REVIEW

2.1 Oil Pulling

Oil pulling or oil swishing is an Ayurvedic practice that involves swishing of oil in the mouth for oral and systemic health benefits. The concept of oil pulling is not new. It has been discussed in the ayurvedic text “Charaka Samhita” (around 3000 BC) where it is referred to as “kavala graham” or “kavala gandoosha”. It was Dr.F. Karach who refamiliarized the concept of oil pulling in 1990s in Russia.

Oil pulling requires placing one tablespoon of oil into the mouth, where it is sipped, sucked and swished between the teeth for a period up to fifteen minutes, then spit it out (Asokan, 2008). As the oil moves throughout the mouth it mixes with saliva until the oil loses its viscosity and becomes milky white in color. There are several instructions to be followed during the practice of oil pulling. It is preferably practiced during early morning hours, on empty stomach, after that brushing the teeth and cleaning the tongue. It is practiced in sitting position with chin upright. It can be done for a maximum of three times in a day in case of acute diseases. There is no contraindication for the practice of oil pulling except for the children below the age of 5 years due to the dangers of aspiration and swallowing. It can be practiced during pregnancy and menstruation also.

The exact mechanism of the action of oil pulling therapy is not clear. It was claimed that swishing of oil in the mouth activates enzymes and draws the toxins out of the blood. Oil pulling is claimed to prevent and heal a wide spectrum of oral and systemic diseases like diabetes, migraine, hypertension, ischemic heart disease, liver, respiratory and renal disorders etc.

A few studies have been carried out in the literature regarding the role of oil pulling therapy in the maintenance of oral health. Amith, Ankola and Nagesh (2007) have shown that oil pulling therapy with sunflower oil significantly reduced plaque scores after 45 days. Another study carried out by Asokan, Emmadi and Chamundeswari (2009) showed that oil pulling therapy was very effective against plaque induced gingivitis both in the clinical and microbiological assessment. The mechanism by which the oil pulling therapy causes plaque reduction is not known. The viscosity of the oil probably inhibits bacterial adhesion and plaque co-aggregation.

Other possible mechanism might be saponification or the "soap-formation" process that occurs as a result of alkali hydrolysis of fat. Sesame oil is a vegetable fat when it is acted upon by the salivary alkali like bicarbonates, the soap forming process is initiated. Soaps are good cleansing agents because they are effective emulsifying agents. Emulsification is the process by which insoluble fat like sesame oil is broken down into minute droplets and dispersed in water. Emulsification greatly enhances the surface area of the oil there by increasing its cleansing action. Sesame oil is relatively high in unsaponifiable substances. The unsaponifiable fraction, a class of substances not found in other fats (sesamin and sesamolin) can probably protect the oral cavity from infection and inflammation by its antioxidant property.

Another study conducted by Asokan, Rathan et al. (2008) showed a definitive reduction in the *Streptococcus mutans* count in plaque and saliva after oil pulling therapy. So, oil pulling therapy has shown to reduce the incidence of dental caries. It is also known to prevent halitosis, xerostomia and cheilitis.

It is extremely simple to practice, no buying of complex products, mixing products like an alchemist or taking zillions of supplements. Other advantages of oil pulling over commercially available chemical preparations include- it does not cause staining of teeth, it does not leave behind a lingering taste and also does not result in allergic reactions (Hebbar, Keluskar & Shetti, 2010).

2.2 Coconut Oil

Coconut (*Cocos nucifera Linn*) is a plant in the Palmae family. Commercial coconut oil is made from copra or the dried kernel meat of coconut and goes through refining, bleaching and deodorizing processes. In contrast, virgin coconut oil (VCO), which is extracted by a wet process directly from coconut milk under controlled temperature, may have more beneficial effects than copra oil since it retains most of its beneficial components.

Coconut oil is considered a saturated fat because it contains more than 90% saturated fatty acids. The previous study reported that VCO reduces total cholesterol, triglycerides, phospholipids, low density lipoprotein (LDL) and very low density lipoprotein (VLDL) cholesterol and increases high density lipoprotein (HDL) cholesterol in serum and tissues compared to copra oil. Moreover, administration of VCO is capable of increasing antioxidant enzymes and reduces lipid peroxidation content. VCO also has a more significant antithrombotic effect over copra oil (Marina, Che Man, Nazimah & Amin, 2009a, b).

Coconut oil has many applications. For example, a large percentage of coconut oil is used for edible proposes, suchas in cooking (especially frying) and making margarine. It is a source of medium chain triglycerides which can be used as nutritional supplement for patients with mal-absorption. Coconut oil is used for the manufacture of chemical feedstocks, synthetic detergents, soaps and cosmetics. To reduce the use of mineral oils which can cause environmental damage, coconut oil has been selected as an alternative base oil for industrial lubricants. Inaddition, the need for odorous essential oils in aromatherapy has led to a remarkable growth in the use of botanical ingredients including VCO (Songkro et al., 2010).

2.3 Oral Health and General Health

Oral health as well as general health qualifies as major public health issues and the greatest burden of oral diseases is on disadvantaged and socially marginalized population. The interrelationship between oral and general health is proven by evidence and is particularly pronounced among older and vulnerable people. When exploring common pathways in oral-systemic health it is clear that oral health has a major etiological role in the pathogenesis of many common systemic diseases: oral plaque biofilm is a potential source of systemic inflammation. The conditions for the mostly proven oral-systemic shared etiology are cardiovascular disease, diabetes and certain respiratory diseases (chronic obstructive pulmonary disease). Severe periodontal disease is associated with diabetes.

Poor oral health can increase the risks of general health. Similarly, systemic diseases and/or the adverse side–effects of their treatments can lead to an increased risk of oral diseases, reduced salivary flow (dry mouth), altered senses of taste and smell, oro-facial pain, gingival overgrowth, alveolar bone resorbtion, mobility of teeth. The high prevalence of multi-medication therapies, especially among elderly may further complicate the impact on oral health. Other relevant issues include high sugar content diets, inadequate oral hygiene (owed to poor dexterity), and alcohol and tobacco use, risk factors that are detrimental to oral health. An oral examination can detect a number of general diseases, including nutritional deficiencies, microbial infections, immune disorders, injuries or oral cancer. Salivary glands are a model of the exocrine glands and an analysis of saliva can provide important clues to general health (Sfeatcu et al., 2011).

2.3.1 Oral microflora

The resident microflora of animals and humans plays a positive role in the normal development of the host. This resident microflora also plays an active role in the maintenance of the healthy state by contributing to the host defences and preventing colonisation by exogenous microorganisms.

The mouth is similar to other environmentally-exposed sites in the body in having a characteristic (autochthonous) and diverse microflora in health. Unusually, this

microflora consists of organisms with apparently contradictory requirements; for example, facultative, microaerophilic, capnophilic and obligately anaerobic species (with either saccharolytic or asaccharolytic metabolic lifestyles) are able to co-exist. The composition of the resident oral microflora shows local variations in composition on distinct surfaces (e.g. tongue, cheek, teeth) due to differences in key environmental conditions. The type of oral microflora can divided into 3 groups following :

2.3.1.1 Indigenous Flora

It refers to the organisms present in the greater than 1% of the total viable count in a particular site such as surface of tongue or supragingival plaque. They are in a compatible ralationship with the host and do not compromise the survival of the host. The common indigenous organisms present in the oral cavity are *Streptococcus*, *Actinomyces* and *Neisseria*.

2.3.1.2 Supplemental Flora

It refers to microorganisms identified in a significant amount (less than 1%) in certain individuals. The most common include *Lactobacillus*. They are influence by environmental changes, e.g. Lactobacillus, is normally found in low levels in plaque. In the carious lesion, as the pH of plaque becomes acidic, *Lactobacillus*. which is acid tolerant multiplies and becomes the dominant microorganism.

2.3.1.3 Transient Flora

This flora comprises of organisms that may be present in the oral cavity for very short periods (hours to days) of time. These organisms may be temporarily established due to exogenous factors like food or drinks and are not harmful to the host. This flora may flourish and become opportunistic in conditions where the host is immune compromised (Patil, Rao, Amrutha & Sanketh, 2013)

TABLE 3
Members of the Human Resident Oral Microflora

Gram-positive bacteria		Gram-negative bacteria	
Aerobes, facultative anerobes, microaerophils	**Anaerobes**	**Aerobes, facultative anaerobes, microaerophils**	**Anaerobes**
Cocci			
Streptococcus *S. anginosus* *S. cricetus* *S. gordonii* *S. mitis* *S. mutans* *S. oralis* *S. rattus* *S. salivarius* *S. sanguis* *S. sobrinus* *S. vestibularis* *Stomatococcus* *S. mucilaginosus*	*Peptostreptococcus* *P. anaerobius* *P. micros*	*Neisseria* *N. flavescens* *N. mucosa* *N. sicca* *N. subflava* *Branhamella* *B. catarrhalis*	*Veillonella* *V. atypica* *V. dispar* *V. parvula*
Rods			
Actinomyces *A. naeslundii* *A. odontolyticus* *A. viscosus* *Arachnia* *A. propionica* *Corynebacterium* *C. matruchotii* *Rothia* *R. dentocariosa* *Lactobacillus* *L. acidophilus* *L. brevis* *L. buchneri* *L. Casei* *L. fermentum* *L. plantarum* *L. salivarius*	*Actinomyces* *A. israelii* *A. meyeri* *Propionibacterium* *P. acnes* *Bifidobacterium* *B. dentium* *Eubacterium* *E. alactolyticum* *E. brachy* *E. nodarum* *E. saburreum* *E. timidum*	*Haemophilus* *H. aphrophilus* *H. parahaemolyicus* *H. parainfluenzae* *H. paraphrophilus* *H. segnis* *Actinobacillus* *A. actinomycetemcomitans* *Eikenella* *E. corrodens* *Capnocytophaga* *C. gingivalis* *C. ochracea* *C. sputigena* *Campylobacter* *C. sputorum* *C. concisus* *Simonsiella*	*Bacteroides* *B. buccae* *B. buccalis* *B. capillosus* *B. denticola* *B. endodontalis* *B. forsythus* *B. gingivalis* *B. gracilis* *B. heparinolyticus* *B. intermedius* *B. loescheii* *B. melaninogenicus* *B. oralis* *B. oris* *B. oulorum* *B. pneumosintes* *B. ureolyticus* *B. veroralis* *B. zoogleoformans* *Mitsuokella* *M. dentalis* *Fusobacterium* *F. naviforme* *F. nucleatum* *F. periodonticum* *Leptotrichia* *L. buccalis* *Wolinella* *W. curva* *W. recta* *Selenomonas* *S. sputigena* *Centipeda* *C. periodontii*
Other microorganisms			
Mycoplasma *M. orale* *M. salivarium* *Candida* *C. albicans* *C. tropicalis* *Entamoeba* *E. gingivalis* *Trichomonas* *T. tenax*	*Treponema* *T. denticola* *T. macrodentium* *T. oralis* *T. pectinovorum* *T. scoliodontium* *T. socranskii* *T. vincentii*		

Figure 2.1 The list of Human Resident Oral Microflora

2.4 Allergic Rhinitis

Allergic rhinitis (AR) has characteristic symptoms of watery nasal discharge, sneezing, itchy nose, and stuffy nose. It is due to allergic reaction to aeroallergens including dust mites, pollens, animal danders, and moulds. Similar symptoms can be due to non-allergic rhinitis which consists of a group of rhinitis due to diversities of causes and the diagnosis is usually based on either identification of known non allergic causes or by exclusion of allergy. Chronic rhinitis is common worldwide and according to epidemiological studies it is estimated to affect 10-40 % of the population (Rasool et al., 2013). AR has very important effects on quality of life and school performance. High treatment costs emerge, and, due to its high prevalence, AR causes a loss of labor hours (Bauchau & Derham, 2004).

2.5 Saliva pH Test

Saliva is a secretion in the mouth produced by salivary glands that discharge into the oral cavity. These secretions moisten mucous membranes in the oral cavity and upper digestive tract, facilitate speech and control bacterial flora in the mouth. They also supply enzymes that prepare food for digestion and produce certain hormones and other compounds.

It was widely shown that salivary characteristic such as pH, flow rate, viscosity and buffering capacity was important in preserving good oral health and free from oral diseases. Saliva is responsible for the maintenance of homeostasis on oral surfaces and its importance for dental health.

One essential factor in maintaining oral pH is salivary buffering capacity. Saliva buffering effect prevents the intra-oral reduction of pH after sugar intake, the first stage in the carious process. The buffering capacity of saliva varies from person to person. Patients whose saliva has a depressed buffering capacity are more susceptible to erosion from acid.

Saliva normally varies in pH balance (alkalinity vs. acidity) between 6.2 to 7.4, with higher pH levels often seen during increased secretion of saliva, for instance, when smelling food cooking or when hungry and viewing pictures of food Salivary pH increases with increase in flow rate. Many studies have shown that decreasing in salivary pH would increase the risk to dental caries (Sinor, Yusoff, Ismail, Rahman & Md Daud, 2009).

2.6 Live Blood Analysis

Live blood analysis can reveal diagnose the disease or disorder is preliminary. It also shows the coagulation and clotting processes of the blood, which are related to the inflammatory biochemical cascade. Furthermore, the speed of degradation of the blood removed from the body and observed over time is related to biological integrity. This research tool is sometimes also used in holistic health assessment.

In live blood analysis can observe the size, shape, variability and cellular integrity of the red blood cells (RBCs). The stickiness and aggregation of the RBCs are also noted. The presence and relative number of white blood cells and their subtypes are noted along with the motility (movement) of these cells. The plasma is checked for platelet aggregates, the formation of fibrin, the presence of microbial and parasitic forms, as well as particulates including cholesterol, crystals, and various contaminants.

The equipment used to conduct live blood analysis includes a dark-field or phase contrast light microscope attached to a digital video camera linked to a computer monitor. Computer software is used to capture and store microphotographs and short videos for subsequent analysis. A sterile blood lancet designed for diabetic blood testing is used to collect a droplet of peripheral blood from the fingertip, which is immediately placed on a microscope slide and then covered with a glass cover slip (Rubik, 2010). This can divided the disorders of red blood cells or other elements that can be detected by using a dark field microscope divided into 3 groups as follows.

1. Group of disorders in digestion conditions and lack of vitamins and minerals.
2. Group of disorders caused by the accumulation of toxins in the liver.

3. Group of disorders in immune system, infection by bacteria, fungi and parasites.

2.6.1 The component of blood cell

There are approximately five million red blood cells 7,500 white blood cells and 300,000 platelets in one drop of blood. At least two million red blood cells are manufactured each second, a pace that balances the equally high rate of red blood cell destruction (Farley, 2012). Blood carries oxygen and nutrients to living cells and takes away their waste products. It also delivers immune cells to fight infections and contains platelets that can form a plug in a damaged blood vessel to prevent blood loss.

Through the circulatory system, blood adapts to the body's needs. When you are exercising, your heart pumps harder and faster to provide more blood and hence oxygen to your muscles. During an infection, the blood delivers more immune cells to the site of infection, where they accumulate to ward off harmful invaders. There are three main types of blood cell:

2.6.1.1 Erythrocytes (red blood cell)

Red blood cells are formed in red bone marrow of spongy bone, which is found in the extremities of long bones and also flat and irregular bones, for example the sternum and the pelvis. The production of red blood cells is called erythropoiesis.

Their shape and large numbers are important in increasing the total surface area for gaseous exchange. They have a diameter of 7-10 mm. Erythrocytes have no nucleus, allowing them to change shape readily so that they can move easily through the small capillary beds. Erythrocytes contain a protein called haemoglobin, which attracts oxygen. As erythrocytes pass through the lungs, oxygen combines with haemoglobin forming oxyhaemoglobin. Oxygen is carried on the haem portion of the haemoglobin molecule. Oxygenated blood, which is bright red in color, is transported to the tissues. As the erythrocytes pass through the tissues, oxygen is released and the haemoglobin becomes a dull colour, making the de-oxygenated blood a dark purplish red colour. Some carbon dioxide is transported from the tissues on the red blood cell. The amount of oxygen erythrocytes carry depends on the amount of haemoglobin they contain. If red blood cells contain an insufficient amount of haemoglobin, the individual will have iron deficiency anaemia.

Healthy red blood will look round cells and can move freely in the plasma. The characteristic of the plasma should clear have the little fat and toxins or may have some minor normally.

2.6.1.2 Leucocytes (white blood cell)

White blood cells have an important role in the recognition and protection of the body against the invasion of foreign bodies including microorganisms and cancer cells. There are two main categories of white blood cells phagocytes and lymphocytes. Phagocytes primarily locate and kill invading microorganisms or foreign antigens, while lymphocytes mainly initiate and direct the immune response. White blood cells travel throughout the body and can move out of the bloodstream and migrate into different tissues depending on chemical mediators that signal the cells. White blood cells have a limited lifespan and require constant replacement. However, numbers of white blood cells increase to combat bleeding, infection or inflammation.

2.6.1.3 Thrombocytes (platelets)

Platelets are smaller than red blood cells and are made in bone marrow. The production of platelets is regulated by thrombopoietin, which stimulates bone marrow to produce platelets. Platelets are necessary for blood to clot (haemostasis). They have a lifespan of 8-11 days and those that are not used in haemostasis are destroyed by macrophages in the spleen. The process of haemostasis is important in the prevention of excessive blood loss from the body.

2.6.1.4 The characteristics of cells that can be found from the live blood analysis.

1. Normal Red Blood Cell (RBCs)

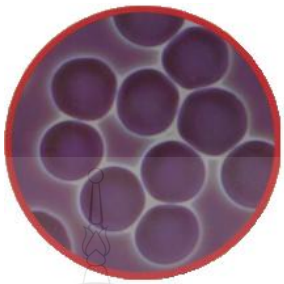

Figure 2.2 Normal Red Blood Cell (RBCs)

The circulatory system is the means by which oxygen, nutrients, antibodies, and hormones are transported to the cells to keep them alive and functioning. This is how our blood looks when we are experiencing optimum health. The Erythrocytes (cells) are round and separated and move through the capillaries very easily. The average size of healthy RBCs is 7.2 microns**.**

2. Rouleau

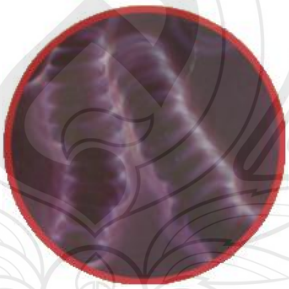

Figure 2.3 Rouleau Formation

When the blood gets to this condition the amount of oxygen that can be transported is severely diminished. This condition is caused by high fat and protein diets and high acidity. Your blood will look like this if you drink one soda and will stay that way for at least two hours. Because your cells are not getting oxygen you will feel tired, have poor digestion, and skin disorders.

3. Healthy White Blood Cell

Figure 2.4 Healthy White Blood Cell

These cells are made up of lymphocytes and leukocytes. They form the basis of the immune system. There are approximately one or two white cells for every 500 red cells. When there is an elevated count it is usually a sign of an infection. The white blood cells protect us from infectious diseases and will destroy any cells that have mutated.

4. Plaque

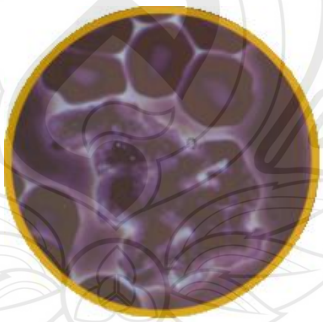

Figure 2.5 Plaque Formation

Atherosclerotic plaque is one of the most dangerous conditions in the blood. It can adhere to the artery walls narrowing and hardening them. These crystals are formed when the system becomes acidic and the fatty acids from simple carbohydrates crystallize.

5. Crystal

Figure 2.6 Crystal Formation

Cholesterol is an important sterol in the body that is the precursor for many important hormones. Only when the body is acidic does the cholesterol crystallize and become a problem. This is probably the most seen crystal in blood analysis, but it's important to realize that cholesterol is not the problem when you see the crystals, acidity is.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Population and Sample Size

3.1.1 Population: The patients age 20-45 years, both male and female in Bangkok.

3.1.2 Sample: The patients male and female who have case history of allergy symptoms total 33 persons.

$$n = \frac{Z^2\delta^2}{d^2}$$

n = sample size

Z = Confident interval at 95% (Z = 1.96)

δ^2 = Variance of oil pulling

δ^2 = 0.31236985

d = Allowable error in estimating (20%)

d = 0.2

$$n = \frac{(1.96)^2(0.31236985)^2}{(0.2)^2}$$

n = 30

3.2 Selection of Sample

3.2.1 Inclusion criteria

3.2.1.1 The patients age 20-45 years, both male and female in Bangkok.

3.2.1.2 The patients who have allergy symptoms such as sneezing, runny nose, coughing itchy eyes, stuffy nose, itchy mouth, throat, ears or face.

3.2.1.3 The patients must stop to take oral anti-histamine drugs and tropical skin corticosteroids before participated at least 7 days and throughout until end of the study.

3.2.1.4 The patients who accept the information and allow to participate the study.

3.2.2 Exclusion criteria

3.2.2.1 People who pregnancy or breast feeding.

3.2.2.2 The patients who take oral anti-histamine drugs and tropical skin corticosteroids within 7 days before participated the study.

3.2.2.3 The patients who had underlying diseases such as heart or hypertension.

3.2.3 Discontinue criteria

3.2.3.1 The patients who do not continue oil pulling until end of study.

3.2.3.2 The patients who have any complication symptoms during participated research.

3.2.3.3 The patients who deny to participate the research.

3.2.3.4 The patients who must take oral anti-histamine drugs and tropical skin corticosteroids during the study.

3.3 Research Variables

3.3.1 Independent variable : Oil pulling in allergy patients.

3.3.2 Dependent variable : The symptoms of allergy patients reduce after done oil pulling.

3.4 Research Tools

3.4.1 Questionnaires for assessment level of allergy symptoms before and after doing oil pulling.

3.4.2 Virgin coconut oil 500 ml/person for doing oil pulling.

3.4.3 Dark field microscope for live blood analysis.

3.5 Research Procedure

3.5.1 The patients were assess the level of allergy symptoms by questionnaire before they begin oil pulling.

3.5.2 The patients were collected saliva sample by spit it out after wake up with disallow to drink water for pH test before they begin oil pulling.

3.5.3 The patients must bleeding the fingertip 1-2 drops to observe rouleau formation, white blood cell activity, plaque formation and crystal formation by looking through dark field microscope before doing oil pulling.

3.5.4 The patients begin to do oil pulling by gargling the virgin coconut oil about 1 tablespoon after wake up 10-15 minutes continue to do it every day until completely 1 month.

3.5.5 The patients were collected saliva sample again for pH test after they do oil pulling.

3.5.6 The patients must bleeding the fingertip 1-2 drops again to rouleau formation, white blood cell activity, plaque formation and crystal formation by looking through dark field microscope test after they do oil pulling.

3.6 Assessment

3.6.1 To assessment the allergy symptoms.

3.6.2 To assessment the rouleau formation, white blood cell activity, plaque formation and crystal formation

Rouleau grading point :

0 : no rouleau formation

1+ : red blood cell overlap 2-4 cell

2+ : red blood cell are arranged in a chain more than 4 cell

3+ : red blood cell clumping

White blood cell activity grading point :

1+ : poor white blood cell activity

2+ : moderate white blood cell activity

3+ : good white blood cell activity

Plaque and Crystal grading point :

+ : found plaque / crystal formation

0 : no plaque / crystal formation

3.7 Statistics Analysis

3.7.1 Normal data used descriptive statistics including the mean, percentage, average and standard deviation.

3.7.2 Statistics used to assess changes before and after oil pulling therapy.

3.7.2.1 If the data has a normal distribution Pair T-test statistics were used because the quantitative data. The comparison in the same patient before and after therapy.

3.7.2.2 If the data are not normally distributed were analyzed using Wilcoxon Match Pair Sign Rank test due to the quantitative data is compared in the same patients before and after therapy. Confidence level used to analyze the results from this study is the percentage 95% ($p < 0.05$).

3.8 Ethical Consideration

Before proceeding with the research. The outline of the study will be sent to certification approval from the ethics committee of Mae Fah Luang University. When certified, the data collection due to the personal information about the patient's illness, including blood sampling is the rights of patients. This study of personal information is not disclosed by the researchers to maintain the confidentiality of non-public. All data are presented as an overview and not an individual or present the name in research. Research participants have a right to refuse to answer questions at all and can not participate or withdraw when feeling uncomfortable in participating in this research. The research was conducted under the principles of the Helsinki and complete.

3.9 Administration and Time Schedule

11 months of research perform from September 2013 - July 2014

Table 3.1 Administration and Time schedule

Activities	2013					2014					
	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July
1. Literature Review	←	———	→								
2. Design and planmethodology			←	———	———	———	→				

Table 3.1 (Continued)

Activities	2013				2014						
	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July
3. Perform and assessment research.						←	—	—	→		
4. Collect result and statistic analysis.								←	—	→	
5. Report complied									←	—	→
6. Presentation and publish											↔

3.10 Budget of this Study

Table 3.2 Budget of this study

List	Cost (Bath)
1. virgin coconut oil 500 ml/person	9,900
2. LBA check	6,000
3. Payment	16,500
4. Preparation of document	5,000
Total	**37,400**

CHAPTER 4

RESULTS

This independent study have objectives are study on the result of oil pulling in allergy patients by live blood analysis technique and compare the tendency and allergy symptoms before and after doing oil pulling.

4.1 Demography

Table 4.1 Demographic Data

Variables	Patients	
	Sample	**Percentage**
Age		
< 25 years	14	43.75
25 - 30 years	12	37.50
> 30 years	6	18.75
Total	**32**	**100.00**
Mean±S.D = 27±4.48, Min = 21, Max = 37		
Gender		
Female	26	81.25
Male	6	18.75
Total	**32**	**100.00**

Table 4.1 (Continued)

Variables	Patients	
	Sample	**Percentage**
Underlying diseases		
Yes	0	0
No	32	100
A family history of allergies.		
Yes	11	34.38
No	21	65.62
Pets lived in the house		
Yes	20	62.5
No	12	37.5
Smoking		
Yes	1	3.13
No	31	96.87
Take oral anti-histamine drugs		
Yes	28	87.5
No	4	12.5

From Table 4.1, In this study have total 33 patients who have allergy symptoms and allowed to participate the study. From the total patients have 32 patients able to continue oil pulling until study complete and has one patient who had leave to participate in research because of the need for anti-allergy medication.

1. The mean age of 32 patients (±S.D) was 27±4.48 years (range, 21-37 years).
2. The range of age
    1) Less than 25 years have 14 patients as a percentage is 43.75%.
    2) From 25-30 years have 12 patients as a percentage is 37.50%.
    3) More than 30 years have 6 patients as a percentage is 18.75%.

3. In 32 patients have 26 female and 6 male as a percentage is 81.25% and 18.75% respectively.

4. In 32 patients no one have underlying diseases as a percentage is 100%.

5. In 32 patients have 11 patients have family history of allergies and 21 patients have none of family history of allergies as a percentage is 34.38% and 65.62% respectively.

6. In 32 patients have 20 patients have pets lived in the house and 12 patients no pets lived in the house as a percentage is 62.5% and 37.5% respectively.

7. In 32 patients has 1 patient who smoking and 31 patients no smoking as a percentage is 3.13% and 96.87% respectively.

8. In 32 patients have 28 patients take oral anti-histamine drugs and 4 patients no take oral anti-histamine drugs as a percentage is 87.5% and 12.5% respectively.

4.2 The Results of Questionnaires to Evaluation in Research

4.2.1 Comparison the symptoms before and after oil pulling

Table 4.2 Stuffy Nose Symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Stuffy nose						
Before	32	2.8750	0.83280	31	4.77	<0.001
After	32	1.9063	0.81752			

From Table 4.2 shows compared stuffy nose symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.9063±0.81752) has significantly difference got better stuffy nose symptom than before oil pulling (mean 2.8750±0.83280), P-value <0.05 denotes significant difference.

Table 4.3 Nasal Mucus Symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Nasal mucus						
Before	32	2.6250	0.70711	31	4.53	<0.001
After	32	1.9375	0.50402			

From Table 4.3 shows compared nasal mucus symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.9375±0.50402) has significantly difference got better nasal mucus symptom than before oil pulling (mean 2.6250±0.70711), P-value <0.05 denotes significant difference.

Table 4.4 Coughing, sneezing symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Coughing, neezing						
Before	32	2.3750	0.70711	31	3.75	<0.001
After	32	1.7500	0.71842			

From Table 4.4 shows compared coughing, sneezing symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.7500±0.71842) has significantly difference got better coughing, sneezing symptom than before oil pulling (mean 2.3750±0.70711), P-value <0.05 denotes significant difference.

Table 4.5 Rhinitis symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Rhinitis						
Before	32	1.7500	0.71842	31	3.48	<0.001
After	32	1.1875	0.47093			

From Table 4.5 shows compared rhinitis symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.1875±0.47093) has significantly difference got better rhinitis symptom than before oil pulling (mean 1.7500±0.71842), P-value <0.05 denotes significant difference.

Table 4.6 Eyes irritation, watery eyes, itching symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Eyes irritation, watery eyes, itching						
Before	32	2.5625	0.80071	31	4.29	<0.001
After	32	1.9063	0.73438			

From Table 4.6 shows compared eyes irritation, watery eyes, itching symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.9063±0.73438) has significantly difference got better eyes irritation, watery eyes, itching symptom than before oil pulling (mean 2.5625±0.80071), P-value <0.05 denotes significant difference.

Table 4.7 Loss of smell symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Loss of smell						
Before	32	1.5938	0.75602	31	3.04	<0.001
After	32	1.1875	0.53506			

From Table 4.7 shows compared loss of smell symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.1875±0.53506) has significantly difference got better loss of smell symptom than before oil pulling (mean 1.5938±0.75602), P-value <0.05 denotes significant difference.

Table 4.8 Mucus symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Mucus						
Before	32	2.1563	0.91966	31	3.69	<0.001
After	32	1.5625	0.71561			

From Table 4.8 shows compared mucus symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.5625±0.71561) has significantly difference got better mucus symptom than before oil pulling (mean 2.1563±0.91966), P-value <0.05 denotes significant difference.

Table 4.9 Sore throat symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Sore throat						
Before	32	2.2813	0.72887	31	6.70	<0.001
After	32	1.5000	0.62217			

From Table 4.9 shows compared sore throat symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.5000±0.62217) has significantly difference got better sore throat symptom than before oil pulling (mean 2.2813±0.72887), P-value <0.05 denotes significant difference.

Table 4.10 Tinnitus symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Tinnitus						
Before	32	1.9688	0.89747	31	4.49	<0.001
After	32	1.3125	0.53506			

From Table 4.10 shows compared tinnitus symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.3125±0.53506) has significantly difference got better tinnitus symptom than before oil pulling (mean 1.9688±0.89747), P-value <0.05 denotes significant difference.

Table 4.11 Headache symptom

Symptom	n	Score		df	t	P-value
		Mean	Std. Deviation			
Headache						
Before	32	2.2500	0.76200	31	2.95	<0.001
After	32	1.7188	0.88843			

From Table 4.11 shows compared headache symptom between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.7188±0.88843) has significantly difference got better headache symptom than before oil pulling (mean 2.2500±0.76200), P-value <0.05 denotes significant difference.

4.2.2 Comparison duration of symptoms appeared before and after oil pulling.

Table 4.12 Each symptoms is less than 4 days / week

Duration	n	Score		df	t	P-value
		Mean	Std. Deviation			
Less than 4 days/week.						
Before	32	2.3125	0.73780	31	-0.30	0.76
After	32	2.3750	0.90696			

From Table 4.12 shows compared the duration of symptoms appeared less than 4 days/week between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 2.3750±0.90696) the duration of symptoms appeared less than 4

days/week has no significantly difference than before oil pulling (mean 2.3125± 0.73780), P-value >0.05 denotes no significant difference.

Table 4.13 Each symptoms is more than 4 days / week

Duration	n	Score		df	t	P-value
		Mean	Std. Deviation			
More than 4 days/week.						
Before	32	2.0938	0.92838	31	3.39	<0.001
After	32	1.4063	0.75602			

From Table 4.13 shows compared the duration of symptoms appeared more than 4 days/week between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.4063±0.75602) the duration of symptoms appeared more than 4 days/week has significantly difference than before oil pulling (mean 2.0938±0.92838), P-value <0.05 denotes significant difference.

4.2.3 Comparison the time of onset symptoms before and after oil pulling.

Table 4.14 The symptoms are expressed when the air change

The time of onset symptoms	n	Score		df	t	P-value
		Mean	Std. Deviation			
When the air changed.						
Before	32	3.0938	0.85607	31	4.46	<0.001
After	32	2.2813	0.77186			

From Table 4.14 shows compared the symptoms are expressed when air change between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 2.2813±0.77186) the symptoms are expressed when air change has significantly difference than before oil pulling (mean 3.0938±0.85607),
P-value <0.05 denotes significant difference.

Table 4.15 The symptoms are expressed usually after waking up in the morning

The time of onset symptoms	n	Score		df	t	P-value
		Mean	Std. Deviation			
After waking up in the morning.						
Before	32	2.8438	0.98732	31	5.52	<0.001
After	32	1.9375	0.80071			

From Table 4.15 shows compared the symptoms are expressed usually after waking up in the morning between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.9375±0.80071) the symptoms are expressed usually after waking up in the morning has significantly difference than before oil pulling (mean 2.8438±0.98732), P-value <0.05 denotes significant difference.

4.2.4 Comparison the impact on daily life before and after oil pulling.

Table 4.16 The symptoms interfere in daily life

The impact on daily life	n	Score		df	t	P-value
		Mean	Std. Deviation			
Interfere in daily life						
Before	32	2.5000	0.71842	31	5.40	<0.001
After	32	1.6563	0.54532			

From Table 4.16 shows compared the symptoms interfere in daily life between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.6563±0.54532) the symptoms interfere in daily life has significantly difference than before oil pulling (mean 2.5000±0.71842), P-value <0.05 denotes significant difference.

Table 4.17 The symptoms disturbed sleep

The impact on daily life	n	Score		df	t	P-value
		Mean	Std. Deviation			
Disturbed sleep						
Before	32	2.2500	0.87988	31	4.03	<0.001
After	32	1.5625	0.56440			

From Table 4.17 shows compared the symptoms disturbed sleep between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.5625±0.56440) the symptoms disturbed sleep has significantly difference than before oil pulling (mean 2.2500±0.87988), P-value <0.05 denotes significant difference.

4.3 The Result of Saliva pH

Table 4.18 Saliva pH

pH	n	Value		df	t	P-value
		Mean	Std. Deviation			
Saliva pH						
Before	32	6.9375	0.61892	31	-0.92	0.37
After	32	7.0625	0.72679			

From Table 4.18 shows compared saliva pH between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 7.0625±0.72679) saliva pH has no significantly difference than before oil pulling (mean 6.9375±0.61892), P-value >0.05 denotes no significant difference.

4.4 The Result of live Blood Analysis

Table 4.19 Rouleau Formation

RBC arrangement	n	Score		df	t	P-value
		Mean	Std. Deviation			
Rouleau (RBC)						
Before	32	2.1563	0.987	31	1.99	0.055
After	32	2.5938	1.132			

From Table 4.19 shows compared the rouleau formation between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 2.5938±1.132) rouleau formation has no significantly difference than before oil pulling (mean 2.1563±0.987), P-value >0.05 denotes no significant difference.

Table 4.20 WBC activity

WBC	n	Score		df	t	P-value
		Mean	Std. Deviation			
WBC activity						
Before	32	1.3750	0.55358	31	-3.48	<0.001
After	32	1.8438	0.62782			

From Table 4.20 shows compared the white blood cell activity between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 1.8438±0.62782) the white blood cell activity has significantly difference than before oil pulling (mean 1.3750±0.55358), P-value <0.05 denotes significant difference.

Table 4.21 Plaque formation

Toxic accumulate	n	Score		df	t	P-value
		Mean	Std. Deviation			
Plaque Formation						
Before	32	0.2813	0.45680	31	-	0.01
After	32	0.5625	0.50402		2.51	

From Table 4.21 shows compared the plaque formation between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 0.5625±0.50402) plaque formation has significantly difference than before oil pulling (mean 0.2813± 0.45680), P-value <0.05 denotes significant difference.

Table 4.22 Crystal formation

Toxic accumulate	n	Score		df	t	P-value
		Mean	Std. Deviation			
Crystal Formation						
Before	32	0.3438	0.48256	31	-1.79	0.08
After	32	0.5313	0.50701			

From Table 4.22 shows compared crystal formation between before and after oil pulling were using Paired T-Test that shows after oil pulling (mean 0.5313±0.50701) crystal formation has no significantly difference than before oil pulling (mean 0.3438±0.48256), P-value >0.05 denotes no significant difference.

CHAPTER 5

CONCLUSION

5.1 Conclusion

In this study have 32 patients, have 26 female (percentage of female is 81.25) and 6 male (percentage of male is 18.75), who have allergy symptoms and allowed to participate oil pulling until study complete. The research hypothesis is oil pulling has ability to decrease the tendency and symptoms in allergy patients.

First, after the statistical analysis of the questionnaires data for compared allergic symptoms between before and after oil pulling, the results shows that all of allergic symptoms identify in questionnaires have statistically significant difference such as stuffy nose, nasal mucus, coughing, sneezing, rhinitis, eyes irritation, eyes watery, eyes itching, loss of smell, mucus, sore throat, tinnitus and headache. For the statistical analysis data compared of duration of symptoms appeared before and after oil pulling, the results shows that the symptoms which appeared more than 4 days/week has statistically significant difference while the symptoms which appeared less than 4 days/week has not statistically significant difference between before and after oil pulling. In addition to, the result time of onset symptoms after the statistical analysis show that both of the symptoms which are expresses when the air changed and after wake up in the morning have statistically significant difference between before and after oil pulling. The result statistical analysis of the impact on daily life show that both of the symptoms which are interfere in daily life and disturbed sleep have statistically significant difference between before and after oil pulling.

Second, after the statistical analysis data of saliva pH for compared between before and after oil pulling, the results shows that saliva pH before and after oil pulling has not statistically significant difference. Furthermore, the statistical analysis results of live blood analysis between before and after oil pulling, the results shows that white blood

cell activity have statistically significant difference while rouleau formation, plaque formation, crystal formation have not statistically significant difference for compared between before and after oil pulling.

5.2 Discussion

Oil pulling therapy involves swishing oil in the mouth for oral and systemic health benefits. It is a simple rejuvenating treatment when done routinely. Recently, results from many studies revealed that monolaurin, the monoglycerides of lauric acid from coconut oil had antimicrobial activity against various gram positive and gram negative organisms, including *Escherichia vulneris, Enterobcater* spp., *Helicobacter pylori, Staphylococcus aureus, Candida* spp., including *C. albicans, C. glabrata, C. tropicalis, C. parapsilosis, C. stellatoidea* and *C. krusei*, as well as enveloped viruses. Electron microscopic images showed that 15 minutes exposure to monoglycerides caused gram positive cocci cell shrinkage and cell membrane disintegration (Thaweboon S., et al., 2011).

The results of this study shows the symptoms of allergy identify in questionnaire found that to do oil pulling continue for 1 month it can reduce the symptoms of allergies down significantly. Some patients may have complications from allergic symptoms such as sinus pain and sinus inflammation. So if oil pulling can prevent allergic rhinitis the primarily cause of sinusitis the sinusitis symptom will relief.

The evaluation by measuring the pH of saliva after awakening was found no effect on the change in the pH of saliva after oil pulling. Mean of pH value after oil pulling equal to 7.0625±0.72679 is neutral while the saliva pH of healthy is 7.4. The reason of pH of saliva is not alkaline after oil pooling it may be because it does not check the pH of saliva immediately after wake up it may cause inaccurate results. The previous study has been determined that an alkaline body is more conducive to health and well-being than an acidic one. A body that tends toward acidity heightens the risk for infections from bacteria, yeast, parasites, and viruses. All of these seek out and thrive in an acid environment. Not only are you more susceptible to infections such as colds and

the flu but also degenerative diseases are promoted if your pH is consistently acid (Reich,1996)

The results of this study on live blood analysis also indicated that rouleau formation was not significantly difference before and after oil pulling. Its cause by the individual viscosity of blood, stressed, imbalance of body fluid which effectively the transport of oxygen and nutrients to the blood cell reduced. The study of Rubik (2010) shows the rapid onset of blood coagulation and clotting in fresh blood draws are generally associated with increased inflammation. Activation of the immune response activates the inflammatory biochemical cascade, which produces blood clotting, presumably to wall off an invading entity, such as a microbe, virus, or cancer cell. White blood cell activity of this study shows that after oil pulling its has significant good activity than before. The effectiveness of the immune system can measurement the quality of white blood cell by considering the size and its activity. Size of healthy white blood cell higher than red blood cell approximately 1.5 time and great activity to eliminate the foreign matter (Bria Health Center, 2004). In addition, both plaque and crystal formation after oil pulling have higher than before expected due to oil pulling can't eliminate plaque and crystal out of blood the other reason its depend on individual life style of patients such as diet especially fat which is the main factor causing the accumulation toxin.

5.3 Comment

5.3.1 Next study, it should be increase the number of patients and increase study time of oil pulling.

5.3.2 It should be monitor of oil pulling and live blood analysis result periodically.

5.3.3 The measurement of saliva pH should to check immediately after wake up.

5.3.4 It should be performed in patients with a history of sinus disease. The development of allergic disease.

5.3.5 The study should increase the laboratory result to support live blood analysis result.

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APPENDIX

APPENDIX

QUESTIONNAIRE FOR EVALUATED ALLERGIC SYMPTOMS BEFORE AND AFTER OIL PULLING

แบบสอบถามก่อนและหลังเข้าร่วมงานวิจัย

หัวข้อ: การศึกษาความสัมพันธ์ของการทำออยล์ พูลลิ่งในผู้ป่วยโรคโพรงจมูกอักเสบ (โรคภูมิแพ้) โดยการวิเคราะห์เม็ดเลือดสด

ดำเนินงานวิจัยโดย: นางสาว พฤกษา ไพศิลป์ รหัสนักศึกษา: 5552003286
นักศึกษาปริญญาโทสาขาวิทยาศาสตร์ชะลอวัย สำนักวิชา เวชศาสตร์ชะลอวัยและฟื้นฟูสุขภาพ

ส่วนที่ 1 ข้อมูลทั่วไป
คำชี้แจง : โปรดเติมเครื่องหมาย ✓ ลงใน ( ) หน้าข้อความหรือเติมข้อความลงในช่องว่างที่เว้นไว้ให้ตามความเป็นจริง

ชื่อ - สกุล : _____ ชื่อเล่น : _____
เพศ : ( ) ชาย ( ) หญิง
อายุ : _____ ปี
สถานภาพ : ( ) โสด ( ) สมรส ( ) หม้าย ( ) หย่าร้าง/แยกกันอยู่
อาชีพ : ( ) นักศึกษา ( ) พนักงานบริษัท ( ) อื่นๆ ระบุ _____
ท่านมีโรคประจำตัวหรือไม่ : ( ) มี ( ) ไม่มี
บุคคลในครอบครัวของท่านมีประวัติเป็นโรคโพรงจมูกอักเสบหรือไม่ : ( ) เป็น ( ) ไม่เป็นบ้านที่คุณอยู่อาศัยมีสัตว์เลี้ยงอาศัยอยู่ด้วยหรือไม่ : ( ) มี ( ) ไม่มี
คุณสูบบุหรี่หรือไม่ : ( ) สูบ ( ) ไม่สูบ
โดยปกติเมื่อมีอาการคุณรับประทานยาแก้ภูมิแพ้ (ยาสเตียรอยด์, ยาแก้อักเสบ, ยาลดน้ำมูก, ยาแก้หวัด, ยาพ่นจมูก) หรือไม่: ( ) รับประทาน ( ) ไม่รับประทาน

ส่วนที่ 2 ข้อมูลด้านสุขภาพ

คำชี้แจง : กรุณากาเครื่องหมาย ✓ลงในช่องที่มีข้อความตรงกับข้อมูลของท่านมากที่สุด

เป็นประจำ = 4 บ่อย = 3 เป็นบางครั้ง = 2 ไม่เป็น = 1

ลักษณะอาการที่พบ	การประเมิน			
	เป็นประจำ	บ่อย	เป็นบางครั้ง	ไม่เป็น
กลุ่มอาการ				
1. คัดจมูก				
2. มีน้ำมูกใสไหล				
3. ไอ,จาม				
4. จมูกอักเสบ				
5. ระคายเคืองตา,น้ำตาไหล, คันตา				
6. สูญเสียการรับกลิ่น				
7. มีเสมหะ				
8. เจ็บคอ				
9. หูอื้อ				
10. ปวดหัว				
ระยะเวลาในการเป็นโรค				
11. อาการในแต่ละครั้งที่เป็นน้อยกว่า 4 วัน/สัปดาห์				
12. อาการในแต่ละครั้งที่เป็นมากกว่า 4 วัน/สัปดาห์				
ช่วงเวลาที่แสดงอาการ				
13. อาการจะแสดงออกเมื่อมีการเปลี่ยนแปลงของอากาศ				
14. มักจะมีอาการข้างต้นหลังตื่นนอนตอนเช้า				

ลักษณะอาการที่พบ	การประเมิน			
	เป็นประจำ	บ่อย	เป็นบางครั้ง	ไม่เป็น
ผลกระทบต่อชีวิตประจำวัน				
15. อาการที่คุณเป็นข้างต้นส่งผลรบกวนการใช้ชีวิตประจำวัน				
16. อาการที่คุณเป็นข้างต้นส่งผลรบกวนการนอนหลับ				

CURRICULUM VITAE

CURRICULUM VITAE

NAME	Miss Phruksa Paisilp
DATE OF BIRTH	15 December 1989
ADDRESS	55/39 Phuketmorningstar village, Muang Phuket Thailand 83000

EDUCATIONAL BACKGROUND

2011	Bachelor of Cosmetic Science Mae Fah Luang University, Thailand

WORK EXPERIENCE

2012-2013	New Product Development SSUP Bangkok 1991 company