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Effect of Combination of Unequal Quantities of Ghee and Honey on Certain Parameters of Untimely Ageing

S.M.S. Samarakoon*, S.K.M.K. Herapathdeniya, H.M.Chandola*****

Abstract

Rate of ageing is determined by one's biological, social, life style and psychological conditions and adversity of which leads to accelerated form of ageing, which is termed as *Akalaja jara* in Ayurveda. The aim of this study was to evaluate combination of unequal quantity of ghee and honey on some selected subjective as well as objective parameters. Results showed that combination of ghee and honey improved certain symptoms of premature ageing including chief complaints, associated symptoms to a significant level. It improved symptoms related to increased *vata, pitta and kapha* ($p<0.001$) in highly significant manner. The improvement of *rasa-kshaya* and *rasavaha sroto dushti* is highly significant ($p<0.001$). Increase in HDL and decrease in triglycerides (17.03%), SGOT (11.66%) is highly significant ($p<0.001$). The DHEA-S level increased (42.68%) only in female patients aged 30-40, but statistically insignificant ($p>0.05$). Having observed above results, it may be concluded that combination of ghee and honey has positive effect in improving certain subjective as well as objective parameters of premature ageing.

Key words: Dhatu; DHEA-S; Dosha; Ghee, Honey; Srotas.

Introduction

The people over 60 years are accepted globally to refer to the older population[1]. Charaka considered that old age starts at 60 years of age, while Sushruta demarcated old age starts at 70. Normal ageing is a universal biological changes that occur with advancing age and are unaffected by disease and environmental influences, which is known as chronological ageing viz. *kalaja jara*. In contrast, the accelerated ageing is strongly affected by environmental, lifestyle and some disease conditions which are related to ageing but not due to ageing itself. This condition is known as *akalaja jara[2].*

Sharangadhara considered maximal life span of 120 years dividing into 12 decades. According to him, chronological deteriorations that take place in each decade are childhood (*balya*), growth (*vriddhi*), complexion or body's glow (*chavi*), intellect (*medha*), skin properties (*twak*), vision (*drushti*), reproduction (*shukra*), valor (*vikrama*), reasoning capacity (*buddhi*), state of motor organs (*karmendriya*), mind (*cheta*) and finally life (*jivitha*)*[3].* It is obvious from the foregoing that ageing is gradual and continuous process which affects various bodily tissues at different times. The effect of ageing is more obvious in the fifth decade when the properties of skin elude or wrinkles.

Though, the rate of ageing is genetically predetermined, ageing is of multi-factorial such as lifestyle, dietary habits, addictions, mental makeup, social and family life, medication, and many other environmental factors. Their unfavorable effects cause premature ageing (*akalaja jara*). Among hundreds of theories of ageing, free radical theory has remained rational over time as it provides many realistic explanations for the process of ageing. The changes induced by free radicals are believed to be the key cause of ageing and disease. Diet, active and stress free living play an unparallel role in neutralizing

Author's Affiliation: *Head, Dept of Ayurveda Basic Principles, Gampaha Wickramarachchi Ayurveda Institute, University of Kelaniya, Yakkala, Sri Lanka. **Head, Dept of Dravyagunavignana, Insitute of Indigenous Medicine, University of Colombo, Rajagiriya, Sri Lnka. ***Professor & Head- Kayachikitsa and Ex. Dean, Executive Editor -AYU, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar -361 008, Gujarat (India).

Reprint's request: Dr. S.M.S. Samarakoon, Head, Dept of Ayurveda Basic Principles, Gampaha Wickramarachchi Ayurveda Institute, University of Kelaniya, Yakkala, Sri Lanka.

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free radicals thereby retarding ageing and age related disease as well[4].

Aims and objectives

The study was designed to assess the efficacy of unequal combination of ghee and honey on various subjective and objective parameters on persons who are clinically aged than their actual age and to evaluate it clinically on certain parameters of ageing.

Materials and Methods

The 52 premature-ageing patients of both sexes who attended the hospital of Gampaha Wickramarachchi Ayurveda Institute (GWAI), Yakkala, Sri Lanka during the period from June 2009 to April 2011 were selected for the clinical study. Informed consent was taken in trilingual consent form after explaining the purpose of study in detail in non-technical terms. The study was cleared by Institutional Ethics Committee of the Institute.

Inclusion criteria

Patients aged between 30-50 years having signs and symptoms of premature ageing were selected irrespective their age, sex, education, socio-economic status and religion.

Exclusion criteria

Patients below 30 and above 50 years, suffering from any chronic systemic disease such as DM, HTN, COPD and malignancies which are due to some other pathologies rather than the ageing and who are on any chronic medication were excluded from the study.

Method of study

The diagnosed patients were subjected to the detailed history taking based on demographic data as well as both subjective and objective parameters before the clinical trial. All patients were subjected to routine hematological and biochemical examinations before and after treatment. The premature ageing patients were prescribed mixture of 10ml honey and 5ml ghee (unequal quantity) thrice daily for 10 weeks in empty stomach. After completion of treatment, patients were observed for 1 month and all parameters were re-assessed.

Criteria for assessment

Subjective criteria

Improvement was assessed by proper scoring of chief complaints, associated symptoms, and symptoms of *dosha, dushya*, *mala* and *srotas* etc., which were authenticated by previous studies[5].

Objective criteria

Routine hematological, bio-chemical and DHEA-S estimation were the objective criteria. They were investigated in every patient before and after the treatment. The obtained results were categorized according to the percentages given as follows; Cured- 100% relief in all signs and symptoms; Marked improvement: 76% to 99% improvement in the signs and symptoms; Moderate improvement: 51% to 75% improvement in the signs and symptoms; Mild improvement: 26% to 50% improvement in the signs and symptoms; Unchanged: <25% improvement in the signs and symptoms.

Results

Effect of therapy on chief complaints: The maximum 60.52% improved in *khalitya*, followed by 60%, 57.4%, 53.13%, 47.61%, 30%, 18.18%, 14.21% and 13.04% in *utsaha -hani*, *slatha-sandhi*, *swasa*, *slatha-asthi*, *vepathu*, *slatha-mansa*, *prabhahani* and *parakrama- hani* respectively. The improvement is statistically highly significant in *slatha-asthi*, *slatha- sandhi*, *khalitya*, *swasa*, *utsaha-hani* ($p<0.001$), whereas it is significant in *slatha-mansa* and *prabha-hani* ($p<0.01$).

Effect of therapy on associated symptoms

Combination of ghee and honey improved constipation (93.26%) followed by 82.75%, 78.13%, 63.88%, 50% and 29.06% in indigestion, fatigue, altered sleep pattern, palpitation and weakness respectively. Indigestion, constipation, altered sleep, fatigue and weakness improved in highly significant manner ($p<0.001$), whereas palpitation is in significant manner ($p<0.01$).

Effect of therapy on Dosha

Combination of ghee and honey improved *vata* & *kapha-kshaya* and *vata*, *pitta* & *kapha-vriddhi* in highly significant manner ($p<0.001$). *Pitta-kshaya* and *kapha-prakopa* is improved in significant manner ($p<0.01$), whereas improvement in *pitta-prakopa* is insignificant ($p>0.05$).

Effect of therapy on Dhatu

Ghee and honey improved *rasa kshaya* (20.94%) in statistically highly significant manner ($p<0.001$) followed by *majja kshaya* (6.6%), *meda kshaya* (3.57%), *rakta kshaya* (2.87%) and *asthi kshaya* (0.79%) in insignificant manner ($p>0.05$). *Mansa kshaya* and *shukra kshaya* are unchanged. *Rasa vriddhi* (21.87%) improved in statistically significant manner ($p<0.01$) and *meda vriddhi* (1.66%) in insignificant manner ($p>0.05$).

Effect of the therapy on Sroto-dushti

Ghee and honey improved *rasavaha srotodushti* (18.11%) in statistically highly significant manner ($p<0.001$), whereas *raktavaha* (30.0%) and *majjavaha srotodushti* (16.66%) in insignificant manner ($p>0.05$). The *mansa, meda*, *asthi* and *shukra vaha sroto-dushti* are unchanged. It showed no moderate improvement and mild improvement in 5.76% patients.

On hematological parameters

This combination increased Lymphocyte (16.5%) and declines in ESR (4.52%) in highly significant manner ($p<0.001$), whereas the decrease in Leucocytes count (6.2%) is statistically significant ($p<0.01$).The increase of eosinophil (18.75%) and RBC (0.25%); and the decline of hemoglobin (0.28%), Neutrophil (5.56%), Monocyte (24.77%) and PCV (0.08%) is statistically insignificant ($p>0.05$).

On liver function test

Ghee and honey decreased parameters of liver function test except HDL, which is increased in statistically highly significant manner ($p<0.001$). The decline in serum triglyceride (17.03%), SGOT (11.66%) and albumin (2.66%) is statistically highly significant ($p<0.001$). The decline in total protein (1.59%), alkaline phosphates (6.69%) and serum bilirubin (5.83%) is significant ($p<0.01$), whereas the decrease in total cholesterol, SGPT and globulin is significant ($p>0.05$).

Effect of therapy on DHEA-S

Ghee and honey decreased DHEA-S levels by 10.32% and 18.83% in male patients belonged to age group 30-40 and 41-50 respectively. DHEA-S level decreased (0.44%) in female patients aged 41-50, which is insignificant ($p>0.05$). Though mean DHEA-S level increased (42.68%) in female patients aged 30-40. All above values are statistically insignificant ($p>0.05$). In total, DHEA-S was investigated in 47 patients before and after treatment. The level of DHEA-S increased in 38.3% patients (n-18) and decreased in 61.7% patients (n-29). Less than 5% improved in DHEA-S in one patient. The 5.1 to 50% improved in 11 patients. More than 50.1% improved in 6 patients.

Overall effect of the therapy

Based on the improvement of all the chief complaints, associated symptoms and other grading systems related to *dosha, dhatu, mala,* and *srotas,* no moderate relief was reported, while it showed mild improvement in 48.08% patients. The 51.92% patients were

unchanged. No patient with marked improvement or cured is found.

Discussion

In this study, combination of ghee and honey was administered orally, three times a day to 52 diagnosed premature ageing patients for 10 weeks period. The combination of honey and ghee has *rasayana, tridosha-shamaka, dipana, sroto-shodhana* and *medhya* properties along with life style and dietary modification has given positive results in some symptoms. The synergistic and cumulative effect of this combination promoted nutrition to *sapta dhatu* and simultaneously pacified vitiated *vata* to normalcy. This gradual transformation of *dhatu* may be the cause of improving the chief complaints and associate symptoms of early ageing significantly.

Collectively ghee and honey pacify *tridosha*, increase digestion (*agni*) and provide many essential nutrients to the body. Ghee enhances absorption of fat soluble vitamins and provides essential fatty acids which are not available in vegetarian diet. Both ghee and honey possess *rasayana[6,7]* and *balya* properties. Ghee and honey possess *samskaranuvartana[8]* and *yogavahi[9]* properties. Ghee is said to have "*sahasra-virya"[10]* and "*sahasra-karma"[11]* meaning ghee is strong enough to alleviate many disease and possesses innumerable pharmacodynamic activities. This may be the probable cause of giving significant result in relieving associated symptoms of premature ageing.

Ghee and honey has effect on rasa *dhatu* but not the other deeper *dhatu*. Ghee and honey has *rasayana*, *agnidipana*, *sroto-shodhana* properties, they are not potent enough to reach deep seated *dhatu* to nourish them or reverse degenerative changes caused by premature ageing. Ayurveda accepts that body and mind are the entities that attached inseparably and derangements of them affect vice-versa. The various parameters are used as subjective criteria to assess the results in the present study. Honey and ghee are well known to have *medhya* properties. Honey is praised as best drug to have *kapha* and *pitta shamaka* properties; ghee for its *vata- pitta shamaka* and *rasayana* properties. In experimental study, combination of ghee and honey showed marked adaptogenic effect in Charles Foster albino rats supporting the positive effect of the test drug[12].

Combination of ghee and honey was able to provide some relief to some symptoms. Honey and ghee is a combination of potent *rasayana, vrishya, balakari, agnidipaka, tridosha-shamaka* and above all *medhya* drugs. While normalizing the physiology of the body by pacifying *tridosha*, correcting digestion and metabolism and nourishing the *sapta-dhatu* in proper way; it releases its *medhya* and adaptogenic properties[13], properties to correct the mental health. Moreover, honey contains iron (0.42mg/100g or 3%) & vitamin C (0.5mg/100g or1%) and increase bone marrow functions[14]. That may be the cause to improve certain hematological parameters. In liver function tests, most parameters were improved to a statistically significant level, on which final conclusion cannot be drawn.

DHEA-S is a precursor steroid hormone secretes primarily from adrenal gland. It is highly associated with age and peak is at age 25 for both sexes. It has a number of beneficial effects on osteoporosis, cardiovascular diseases, cognitive functions, and general well-being. DHEA-S is accepted as the best biochemical bio-marker for chronologic age[15]. Initial mean values of DHEA-S in male patients aged 30-40, 41-50 and 51-60 as well as in age matched female patients were within physiological range. Ghee and honey increased DHEA-S only in female patients aged 30-40, whereas in other age groups and both sexes DHEA-S was decreased. The final mean DHEA-S levels also were within normal range except of one patient whose DHEA-S was increased massively where other pathology is suspected. The similar results observed by another study, where baseline DHEA-S levels were higher in men than women[16].

Conclusion

Premature ageing is accelerated version of ageing, which create untimely symptoms of ageing and age related diseases depending upon its rate determining by various factors. Ageing is an inevitable physiological phenomenon which affects every system of the body resulting in various age associated disease. Ayurveda accept the fact that every structural and functional aspects of the body including *dosha*, *dhatu*, *mala*, *agni*, *srotas*, *indriya* and *manas*. *Rasayana* is one of the eight branches of Ayurveda aiming at geriatric care. The main objective of *rasayana* is to improve nutritional state of body by which healthy youthfulness and longevity is expected. For this purpose a large number of formulations are being used from immemorial past. In the present study unequal combination of ghee and honey was selected for the clinical study of premature ageing. This possesses *rasayana, balya, agni dipana, srotas shodhana* and *tridosha shamaka* properties. In the clinical study, it was revealed that ghee and honey contains antioxidant properties that can scavenge free radicals; a widely accepted cause of ageing. It also contains antioxidants, free radical scavenging activity, adaptgenic activity, immune modulator activity. Keeping all these facts, it can be concluded that observed result in subjective as well as objective parameters are due to anti ageing effect of the combination of ghee and honey and it is an effective potential medicine for age related diseases and preventing premature ageing.

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