

# **THE EFFECTS OF HONEY ON POSTMENOPAUSAL WOMEN**

**BY**

**DR. LILI HUSNIATI BINTI YAACOB**

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## **ABBREVIATIONS**

HRT	- Hormone replacement therapy
WHI	- Women's Health Initiative
FMP	- Final menstrual Period
LH	- Luteinizing hormone
FSH	- Follicular stimulating hormone
CVD	- Cardiovascular disease
CEE	- Conjugated equine estrogen
MPA	- Medroxyprogesterone acetate
BMD	- Bone mineral density
SERMs	- Selective Estrogen Receptor Modulators
TC	- Total cholesterol
TG	- Triglycerides
LDL	- Low density lipoprotein
HDL	- High density lipoprotein
RUTH	- Raloxifene Use For The Heart
MORE	- Multiple Outcome of Raloxifene Evaluation
HIV	- Human immunodeficiency virus
DEXA	- Bone densitometry scan

CRF	- Clinical record form
ALT	- Alanine transaminase
AST	- Aspartate transaminase
FBS	- Fasting blood sugar
Hb	- Haemoglobin
BMI	- Body mass index
WC	- Waist circumference
RCT	- Randomised controlled trial
PV	- Pervaginal bleeding
ERT	- Estrogen replacement therapy
RUTH	- Raloxifene Use For The Heart
FAMA	- Federal Agriculture Marketing Authority
HUSM	-Hospital Universiti Sains Malaysia
ANOVA	- Analysis of variance
ANCOVA	- Analysis of covariance
LIFT	- Long-Term Intervention on Fractures with Tibolone
BIRADS	- Breast Imaging-Reporting and Data System

## **ABSTRAK**

### **KESAN MADU TUALANG TERHADAP WANITA MENOPAUS**

#### **Pengenalan:**

Keputusan penyelidikan yang terbaru menunjukkan kesan negatif terapi gantian hormon terhadap wanita yang telah menopaus. Kesan daripada itu, ramai wanita telah memilih perubatan alternatif sebagai rawatan untuk masalah menopaus mereka dan madu merupakan salah satu daripada rawatan yang dimaksudkan.

#### **Objectif :**

Untuk mengkaji kesan Madu Tualang terhadap profil keselamatan, risiko jantung, perubahan tahap hormon dan ketumpatan tulang wanita menopaus.

#### **Metodologi:**

Ini merupakan kajian rawak untuk melihat kesan Madu Tualang 20gm setiap hari berbanding terapi gantian hormon, femoston conti selama 4 bulan ke atas 79 wanita yang telah menopaus berumur dalam lingkungan 45 hingga 60 tahun. Tujuan utama kajian ialah untuk mengkaji perubahan dari segi profil keselamatan, faktor risiko jantung, profil hormon dan ketumpatan tualang sebelum dan selepas kajian di antara dua kumpulan tersebut.

Perbezaan di antara keputusan di dalam kedua-dua kumpulan sebelum dan pada 4 bulan kajian di analisa menggunakan Paired t-test. Analisis kovarians (ANCOVA) dilakukan bagi melihat perbezaan di antara dua kumpulan ini di akhir tempoh kajian.

#### **Keputusan :**

Empat puluh wanita telah di bahagikan secara rawak ke dalam kumpulan terapi gantian hormon dan selebihnya, iaitu 39 orang ke dalam kumpulan Madu Tualang. Tiada perbezaan signifikan dari segi statistik di antara dua kumpulan dari segi sosiodemografi dan tempoh menopaus. Perbezaan juga tidak dapat di lihat di antara dua kumpulan dari segi profil keselamatan dan ketepuan tulang di akhir kajian. Walaubagaimanapun terdapat perbezaan di antara tahap kolesterol, LDL-C dan FBS di dalam kumpulan wanita yang mengambil madu pada empat bulan kajian. Terdapat peningkatan tahap hormon FSH, LH dan estradiol pada kumpulan terapi gantian hormon di akhir kajian. Walaubagaimanapun, terdapat 35.4% peserta yang mengalami pendarahan sepanjang kajian, di mana kesemuanya terdiri daripada peserta yang mengambil terapi gantian hormon.

#### **Kesimpulan :**

Pengambilan Madu Tualang sebanyak 20 gm sehari selama empat bulan di dapati selamat dan mempunyai kesan yang sama terhadap ketumpatan tulang. Walaubagaimanapun terdapat peningkatan tahap kolesterol dan paras gula berkait dengan pengambilan madu Tualang dalam tempoh yang sama.

## **ABSTRACT**

### **THE EFFECTS OF TUALANG HONEY ON POSTMENOPAUSAL WOMEN**

#### **Introduction:**

Results of recent trial have shown some negative effects of hormone replacement therapy on postmenopausal women. Therefore there has been a move towards using alternative medicine as a treatment for menopausal problems and honey is one of the alternative.

#### **Objectives:**

To investigate the effects of Tualang Honey on the safety profiles, cardiovascular risk factors, changes in hormones and also bone density in postmenopausal women.

#### **Methods:**

A randomized, controlled trial comparing the effects of Tualang Honey 20 gm/day for a 4-month intervention period among healthy post-menopausal Malay women aged 45-60 years old was conducted. The primary outcome measures were to evaluate changes from baseline on the safety profiles, cardiovascular risk factors, hormonal profiles and bone loss of Tualang honey as compared to hormone replacement therapy. Paired t-test was used to analyze the difference between the outcome at baseline and 4 months of intervention in both groups. Analysis of covariance (ANCOVA) was performed to evaluate the difference between groups at the study end-point with baseline scores as co-variates.

**Results:**

Fourty and thirty nine women were randomly assigned to Tualang Honey and hormone replacement therapy group respectively with no statistical difference in socio demographic, anthropometrics and duration of menopause. There were no difference in the bone densitometry at the end of the four month in both groups. There were also no significant changes in safety parameters seen in the haematological profile, liver enzymes and renal function in the two randomized groups. However, there was a significant increase in the total cholesterol, LDL-C and FBS in the honey treated group compared from baseline. There was improvement of FSH, LH and estradiol levels in the HRT group. There were 35.4% of participants who reported per vaginal bleeding, where all of them were from the hormone treated group

**Conclusion:**

Daily intake of Honey at 20 mg/day for four month was found to be safe to use and have the same effect on bone densitometry compared with hormone replacement therapy. However consumption of honey for four months was associated with an increase in the cholesterol and fasting blood sugar level.