The Effects Of Tualang Honey On Sperm Profile In High Cholesterol Diet Induction Animal Model

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HYPERCHOLESTEROLAEMIA

MAIN RISK FACTOR:
- HIGH CHOLESTEROL DIET

TUALANG HONEY SUPPLEMENT

Contains more flavonoids & phenolic acids:
- anti-oxidative & anti-inflammatory

MALE INFERTILITY

SPERM PARAMETERS:
- SPERM CONCENTRATION
- SPERM VIABILITY
- SPERM MOTILITY
- SPERM PROGRESSIVE MOTILITY

BACKGROUND

Whitfield et al., 2015

Ismail et al., 2014
This study aimed to determine the effects of TH on the sperm parameters of high cholesterol diet administered rats.

Promote the use of alternative medicine in the management of male infertility.
METHODS

25 Male Sprague Dawley rats (200 - 250 g each)

Control (20 weeks) C

12% high cholesterol diet (HCD) (16 weeks)

Treatment phase: Continued HCD (4 weeks)

A

B

C

D

DW 1.2g/kg of TH

2.4g/kg of TH

3.0g/kg of TH

Sacrifice & Sample Collection

Cauda Epididymis (Sperm parameters)

Normal diet: standard rat pellet

12% high cholesterol diet (powdered)

DW: Distilled water

TH: Tualang Honey
RESULTS

Figure 1: Mean (SD) sperm parameters of Control and Group A (untreated).

***: p<0.001
Figure 2: Mean (SD) sperm parameters of Group A, B, C and D.
DISCUSSION

**HC** → ↑ CRP & Inflammation → ↑ Reactive oxygen species (ROS) & free radicals → Lipid peroxidation & DNA damage → MALE INFERTILITY

Spermatozoa damage & dysfunction → Impairs sperm motility & sperm-oocyte interaction

**TH**

Flavonoids & Phenolic acids

Interact synergistically

Vitamin A, E & Catalase

Anti-Oxidant activity

Free radical scavenging activity

Lipid peroxidation

Damage & dysfunction

(Protect against oxidative stress)

**IMPROVE THE SPERM PARAMETERS**

(Kishore et al., 2011), (Mahaneem et al., 2011)

(Sedes et al., 2018)
CONCLUSION

- TH supplementation of high cholesterol diet administered rats
  - Improved the sperm parameters
- The higher the dosage
  - The higher the improvement of sperm parameters
- Further explore the potential of TH in improving male infertility

LIMITATIONS

- Further study should be done on the effects of TH to:
  - Sperm morphology, testicular histological changes and hormone such as testosterone, Follicular Stimulating Hormone (FSH) and Luteinizing Hormone (LH).


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THANK YOU