

**MELATONIN MENURUNKAN BERAT BADAN TETAPI TIDAK  
MENURUNKAN KADAR TNF- $\alpha$  PADA TIKUS WISTAR JANTAN YANG  
DIBERI MINYAK *JELANTAH* SELAMA 28 HARI**

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**ABSTRAK**

**Latar Belakang :** Penyakit perlemakan hati non alkohol atau *Non Alcoholic Fatty Liver Disease* (NAFLD) terjadi ketika asupan dan sintesis asam lemak bebas lebih banyak terjadi dibandingkan proses oksidasi dan reseksinya dalam darah. Melatonin merupakan antioksidan kuat yang dapat meningkatkan sintesis antioksidan endogen dalam tubuh, menekan respon inflamasi dan menghambat pembentukan steatosis.

**Tujuan :** Menganalisis pemberian suplemen melatonin dalam menurunkan berat badan dan kadar TNF- $\alpha$  pada tikus *Wistar* jantan yang diberi minyak *jelantah*.

**Metode Penelitian :** *True experimental* dengan menggunakan *post-test only control group design*. Penelitian ini menggunakan 18 ekor tikus, dibagi menjadi 3 kelompok yaitu kelompok kontrol positif ( $P_0$ ) diberi minyak *jelantah*, kelompok perlakuan 1 ( $P_1$ ) diberi minyak *jelantah* dan melatonin dosis 5mg/kgBB, kelompok Perlakuan 2 ( $P_2$ ) diberi minyak *jelantah* dan melatonin dosis 10mg/kgBB selama 28 hari. Analisis data menggunakan uji *One Way Anova* dan dilanjutkan dengan uji *Tukey HSD* untuk mengetahui dosis perlakuan mana yang lebih baik.

**Hasil Penelitian :** Ada perbedaan bermakna rerata berat badan antara kelompok  $P_2$  dan  $K_0$  ( $p=0,019$ ) dengan selisih rerata berat badan kelompok  $P_2$  sebesar 19,167 lebih rendah dari kelompok  $K_0$ . Tidak ada perbedaan kadar TNF- $\alpha$  antar ketiga kelompok yang diberi minyak *jelantah* ( $p=0,155$ ).

**Simpulan :** Melatonin dosis 10mg/kgBB menurunkan berat badan tikus *wistar jantan* yang diberi minyak *jelantah* selama 28 hari, tetapi tidak menurunkan kadar TNF- $\alpha$ .

Kata kunci : Perlemakan hati non alkohol, minyak *jelantah*, melatonin, jumlah steatosis, kadar TNF- $\alpha$ .

**MELATONIN LOSES BODY WEIGHT BUT DOES NOT REDUCE TNF- $\alpha$   
LEVELS IN MALE WISTAR RATS INDUCED WITH WASTE COOKING  
OIL FOR 28 DAYS**

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**ABSTRACT**

**Background:** Non Alcoholic Fatty Liver Disease (NAFLD) occurs when the intake and free fatty acid synthesis occurs more frequently than its oxidation and resecretion in the blood. Melatonin is a powerful antioxidant that can boost the synthesis of endogenous antioxidants in the body, suppress the inflammatory response and inhibit the formation of steatosis.

**Objective:** To analyze the effect of melatonin supplementation in reducing body weight and TNF- $\alpha$  levels in male *Wistar* rats were fed by waste cooking oil.

**Methods:** True experimental study using post-test only control group design. This study was done on 18 male *wistar* rats were divided into 3 groups : the positive control group (P<sub>0</sub>) was administrated waste cooking oil, the treated group 1 (P<sub>1</sub>) was administrated waste cooking oil and 5mg/kgBW melatonin, and the treated group 2 (P<sub>2</sub>) was administrated waste cooking oil and 10mg/kgBW melatonin for 28 days. Data analysis using One Way ANOVA test and followed by Tukey test to determine the most effective dose of melatonin.

**Results:** There was significant difference in body weight between P<sub>2</sub> group and K<sub>0</sub> group ( $p=0,019$ ) with the mean body weight difference was 19,167g lower than K<sub>0</sub> group. There was no difference in TNF- $\alpha$  levels between the three groups ( $p=0,155$ ).

**Conclusion:** Melatonin dose of 10mg/kgBW loses body weight male *Wistar* rats have given by waste cooking oil for 28 days, but does not reduce TNF- $\alpha$  levels.

**Keywords:** non-alcoholic fatty liver, waste cooking oil, melatonin, TNF- $\alpha$  levels.