

ABSTRAK

PENGARUH BEE POLLEN TERHADAP KADAR hs-CRP TIKUS JANTAN GALUR WISTAR YANG DIINDUKSI PAKAN TINGGI LEMAK

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Dislipidemia menyebabkan lemak terdeposit di dinding pembuluh darah lalu menyebabkan peradangan yang mengakibatkan *cardiovascular disease* (CVD). Peradangan menginduksi sitokin dan protein fase akut seperti *C-reactive protein* (CRP) yang dalam kadar tertentu menandakan proses inflamasi yang sedang berlangsung. Pemeriksaan *high sensitivity C-Reactive Protein* (hs-CRP) dapat dijadikan prediktor CVD. Simvastatin digunakan untuk pencegahan primer CVD tetapi menimbulkan efek samping yaitu mialgia, miopati, rhabdomyolisis, gangguan memori, derilium, dan lain-lain. Tujuan penelitian ini adalah menganalisis efek pemberian *bee pollen* terhadap kadar hs-CRP tikus jantan galur Wistar yang diberikan pakan tinggi lemak serta mengetahui apakah *bee pollen* dapat setara dengan Simvastatin dalam menurunkan kadar hs-CRP. Penelitian ini menggunakan metode eksperimental laboratorium sungguhan menggunakan 30 ekor tikus dibagi menjadi 6 kelompok ($n=5$). Tikus diadaptasi selama 7 hari diberi pakan standar. Selanjutnya kelompok 1 diberi pakan standar selama 28 hari. Kelompok 2 (pakan tinggi lemak/PTL), kelompok 3 (PTL + Simvastatin 0,9 mg/kgBB/hari), kelompok 4 (PTL + *Bee Pollen* 18 mg/kgBB/hari), kelompok 5 (PTL + *Bee Pollen* 36 mg/kgBB/hari), kelompok 6 (PTL + *Bee Pollen* 72 mg/kgBB/hari) diberi PTL selama 28 hari sedangkan Simvastatin dan *Bee Pollen* diberikan dari hari ke-15 hingga 28. Kadar hs-CRP diperiksa hari ke 15, dan 29 dengan metode *latex enhance immunoturbidimetric assay*. Hasil dianalisis dengan uji ANAVA dilanjutkan dengan uji Tukey HSD dengan $\alpha=0,05$. Terdapat penurunan hs-CRP pada kelompok B1, B2, B3 berturut-turut sebesar (1,271%), (1,887%), dan (4,963%). Pemberian *bee pollen* dengan dosis B3 setara dengan kelompok SIMV dalam menurunkan hs-CRP tikus jantan galur Wistar yang diinduksi PTL ($p>0,05$).

Kata kunci: dyslipidemia, hs-CRP, *Bee Pollen*, Simvastatin

ABSTRACT

THE EFFECT OF BEE POLLEN ON hs-CRP LEVEL TO MALE RATS STRAIN WISTAR WHICH HAVE BEEN INDUCED WITH HIGH FAT DIETARY

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Dyslipidemia causes fat to deposit inside the arterial wall and activate the inflammatory reaction leading to cardiovascular disease (CVD). Inflammation induces the production of cytokines and acute phase proteins such as C - reactive protein (CRP) thus elevation of these substances in the blood may indicate that an inflammation is going on. A highly sensitive examination of CRP, known as High Sensitivity C - reactive protein (hs-CRP), can be used as a predictor of CVD. Although Simvastatin is currently used as a primary care in CVD prevention, it also has some side effects such as myalgia, myopathy, and rhabdomyolysis. memory loss, delirium, etc. The purpose of this experiment is to analyse the effect of bee pollen on hs-CRP levels of male rats which have been induced with high fat dietary and to find out if bee pollen can be considered equal to simvastatin in lowering hs-CRP level. The research method was a true experimental design using 30 rats which were divided into six randomized groups (n=5). All rats were adapted for 7 days using normal diet. After that, Group 1 was given standard diet for 28 days. Group 2 (High fat diet/HFD), Group 3 (HFD + Simvastatin 0,9mg/kgBW/day), Group 4 (HFD + Bee pollen 18 mg/kgBW/day), Group 5 (HFD + Bee pollen 36 mg/kgBW/day), and Group 6 (HFD + Bee pollen 72 mg/kgBW/day) were given HFD for 28 days whilst Simvastatin and Bee pollen were given from day 15 until day 29. High Sensitivity C - reactive protein levels were checked on day 15 and 28 with latex enhance immunoturbidimetric assay method. The results were analysed using ANAVA and Tukey HSD Test with $\alpha = 0,05$. The average decrease of hs-CRP in group B1, B2, B3 respectively are (1,271%), (1,887%), and (4,963%). Bee pollen proved to be able to lower hs-CRP levels on male rats which have been induced with high fat dietary and Bee pollen can be considered equal to Simvastatin in lowering hs-CRP level.

Keywords : Dyslipidemia, hs-CRP, Bee pollen, Simvastatin

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