

ABSTRAK

PENGARUH SUPLEMENTASI KALSITRIOL TERHADAP HISTOPATOLOGIK KLENJAR PARATIROID TIKUS DEWASA OSTEOPOROSIS YANG DIINDUKSI PAKAN FOSFOR TINGGI

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Konsumsi fosfor tinggi menyebabkan hiperfosfatemia, hipokalsemia, hiperparatiroid dan menekan produksi kalsitriol. Penelitian ini dilakukan untuk melihat pengaruh pemberian kalsitriol terhadap histopatologi kelenjar paratiroid tikus dewasa osteoporosis yang diinduksi pakan fosfor tinggi.

Sepuluh ekor tikus wistar betina umur delapan minggu dibagi menjadi dua kelompok (OS dan OS₄₀). Dua minggu pasca adaptasi dilakukan induksi osteoporosis, tikus OS dan OS₄₀ diberi pakan fosfor tinggi selama delapan minggu dan air minum aquabidestilata *ad libitum*. Pasca induksi osteoporosis, kelompok tikus OS diberi pakan standar, sedangkan kelompok tikus OS₄₀ diberi pakan standar ditambah suplemen kalsitriol 40ng/tikus/hari selama lima minggu. Pada akhir penelitian, tikus dieuthanasi, kelenjar paratiroid diambil untuk pemeriksaan histopatologi dengan pengecatan Hematoksilin Eosin (HE).

Hasil pemeriksaan histopatologi kelenjar paratiroid tikus OS terjadi peningkatan aktivitas kelenjar paratiroid ditandai banyak sel prinsipal gelap, inti sel mengecil, sitoplasma bervakuola (mengalami hipertrofi), sementara tikus OS₄₀ aktivitas kelenjar paratiroid kembali normal ditandai peningkatan jumlah sel prinsipal terang berinti besar, sitoplasma asidofilik dan sedikit sel hipertrofi. Dari hasil penelitian, disimpulkan bahwa suplementasi kalsitriol 40ng/tikus/hari pada tikus dewasa osteoporosis selama lima minggu menurunkan aktivitas kelenjar paratiroid.

Kata kunci: Kelenjar paratiroid, osteoporosis, fosfor tinggi, kalsitriol.

ABSTRACT

EFFECTS OF CALCITRIOL SUPPLEMENTATION ON THE HISTOPATHOLOGICAL PARATHYROID GLANDS OF OSTEOPOROTIC ADULT RATS WHEN INDUCED WITH A HIGH- PHOSPHORUS FEED

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High phosphorus consumption causes hyperphosphatemia, hypocalcemia, hyperparathyroidism and suppresses calcitriol production. This study was conducted to observe the effects of calcitriol administration on the histopathological parathyroid glands of osteoporotic adult rats when induced with a high phosphorus feed.

Ten female wistar rats aged eight weeks were divided into two groups (OS and OS₄₀). After two weeks post-adaptation of induced osteoporosis, the OS and OS₄₀ rats were given a high phosphorus feed for eight weeks and drinking water aquabidestilata *ad libitum*. Post-induction of osteoporosis, the group of OS rats was fed standard feed, while the OS₄₀ rat group was fed standard feed plus a 40ng / rat / day calcitriol supplement for five weeks with drinking water aquabidestilata *ad libitum*. At the end of the study, the rats was euthanized, the parathyroid glands were removed for histopathological examination and dyed with Hematoxylin Eosin (HE).

The results of the histopathological examination of the parathyroid glands of the OS rats showed an increase in activity of the parathyroid glands marked by many dark principal cells, shrinking of the cell nuclei, and cytoplasm of the vacuole (hypertrophy), while in OS₄₀ rats parathyroid gland activity returned to normal. This was marked by an increase in the number of principal bright nuclear cells, acidophilic cytoplasm and fewer hypertrophic cells. From the results of the study, it was concluded that supplementation of calcitriol at 40ng / rat / day in osteoporotic adult rats for five weeks decreased the activity of the parathyroid gland.

Keywords: Parathyroid gland, osteoporosis, high phosphorus, calcitriol.