

Turkish Journal of Medical Sciences

Turkish Journal

Effects of Excess Vitamin B₆ Intake on Serum Lipid Profile and Cerebral Cortex in Rats

of

Medical Sciences


Göksemin ACAR¹

Leyla SATI²

Yasemin SEVAL²

Aysel AĞAR³

Ramazan DEMİR²

 [Keywords](#)

 [Authors](#)



medsci@tubitak.gov.tr

[Scientific Journals Home Page](#)

¹Department of Neurology, Faculty of Medicine,
Pamukkale University, Denizli - TURKEY

²Department of Histology and Embryology,
Faculty of Medicine, Akdeniz University, Antalya - TURKEY

³Department of Physiology, Faculty of Medicine,
Akdeniz University, Antalya - TURKEY

Abstract: Aim: The present study was undertaken to investigate the effects of dietary excess of vitamin B₆ on certain blood parameters [serum total cholesterol, high density lipoprotein (HDL) cholesterol and total lipid] and the cerebral cortex. Materials and Methods: A total of 36 albino rats were included in the study. Saline solution was administered to control groups (CG-10, n = 6 for 10 days; CG-15, n = 6 for 15 days; CG-20, n = 6 for 20 days). The experimental groups (EG-10, n = 6; EG-15, n = 6; EG-20, n = 6) received 5 mg/kg vitamin B₆ daily for 10 days, 15 days and 20 days, respectively. Serum total cholesterol, HDL cholesterol and total lipid levels were measured and compared in CGs and EGs. The cerebral cortex tissue samples were examined by electron microscopy. Results: The total serum cholesterol levels were significantly lower (P < 0.05) although serum HDL levels were significantly higher (P < 0.01) in all EGs. Total serum lipid levels were higher in EG-15 and EG-20 groups than in CGs. The structural degenerations in the perikaryon and neuropil were found prominent in EG-15 and EG-20 groups but not in EG-10. Marked damage in the neuronal and neuropilic structure was observed in rats who received long-term high doses of vitamin B₆. Based on these results, a relationship between cerebral cortex damage and serum total lipid and HDL levels in the EG-15 and EG-20 groups is suggested. Conclusions: Dietary excess of vitamin B₆ intake reduces serum total cholesterol levels, but not serum HDL and total lipid levels, and also causes cerebral cortex damage in long-term treatment. Thus, a careful diet plan and monitoring of vitamin B₆ dose are recommended in patients who are supplemented with this vitamin.

Key Words: Vitamin B₆, blood, cholesterol, rat, cerebral cortex

Turk J Med Sci 2006; **36**(6): 327-335.

Full text: [pdf](#)

Other articles published in the same issue: [Turk J Med Sci, vol.36, iss.6.](#)