

Clinical Practice. NTBC Therapy for Tyrosinemia Type 1: How Much Is Enough?

Abstract

Four patients with tyrosinemia type 1 (ages 6– 32 months) were treated with 2-(2-nitro-4-trifluoro-methylbenzoyl)-1,3-cyclohexandion (NTBC) at Cairo University Children's Hospital, Egypt and followed up for 12– 27 months. The recommended average dose of NTBC is 1 mg/kg/day. They were started on the following doses: 0.8, 0.58, 0.5, and 0.625 mg/kg/day, respectively.

Two months

after start of therapy, succinylacetone was undetectable in patients 1, 2, and 4, while in case 3, it was 5.4 μ M. Her NTBC dose was increased from 0.5 to 0.65 mg/kg/day, and succinylacetone was undetectable 1 month later. They were

kept on NTBC doses ranging from 0.55 to 0.65 mg/kg/day.

These doses allowed catch up growth, normalization of synthetic liver functions, steep drop in serum alpha fetoprotein, reduction in phosphate loss in urine, normalization of serum calcium, phosphate, and alkaline phosphatase,

and healing of active rickets. Succinylacetone was undetectable in urine on these doses. In conclusion: Doses of NTBC, lower than recommended, may be helpful in treatment of tyrosinemia, on condition that succinylacetone production is suppressed, and AFP is maintained normal or showing a progressive decrease. This cost-effective dose may allow treatment of affected children from economically underprivileged countries, but longer follow up periods are needed.