

**Prophylaxis of Vitamin K Deficiency in Newborns**

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**Aim.** Assessment of the effect of vitamin K1 on the prothrombin time (PT) of newborns during the first week and month of life.

**Method.** Five hundred and four infant-mother pairs were randomly selected from the total of 684 infant term deliveries of an appropriate gestational age at the Maternity Ward of the Koprivnica Medical Center in Koprivnica, Croatia, between April 20, 1988, and June 30, 1989. One group of mothers (N=132) was given 10 mg of vitamin K1 4 to 240 hours before delivery, while the other (N=372) was left untreated. The newborns from the latter group were randomized into 3 groups: group 1 (N=107) was not given vitamin K, at all, group 2 (N=107) received 2 mg of vitamin K1 perorally, and group 3 (N=158) received 1 mg of vitamin K1 intramuscularly. The newborns' prothrombin time was determined by a modified Quick's method from the umbilical cord blood, immediately after birth (PT0) and before the vitamin K administration (PT1), on the third (PT2) and fifth (PT3) days of life and, finally, 4 to 6 weeks after birth (PT4).

**Results.** Postnatal vitamin K1 administration shortened PTs in the newborns. PT2 was significantly shorter in the groups postnatally provided with vitamin K1 (groups 2 and 3) than in the control group (group 1) and the group of neonates prenatally supplied by the vitamin (group 4). PT3 in groups 2, 3 and 4 was also significantly shorter than in the control group (group 1). PT4 in group 3 was significantly shorter than in the control group.

**Conclusion.** In regard to the shortening of the infants' prothrombin times during the first week of life, prenatal and peroral postnatal vitamin K1 applications to the newborns were as effective as intramuscular postnatal vitamin K1 administration, but they appeared less effective during the 4th to 6th weeks of life.

**Key words:** hemorrhagic disease of newborn; prothrombin time; vitamin K