

Thesis Title : NATURAL KILLER CELLS IN THAI CHILDREN
WITH DENGUE HEMORRHAGIC FEVER/DENGUE
SHOCK SYNDROME

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ABSTRACT

Natural killer (NK) cell activity against K-562 target cells and HNK-1⁺ cell levels were serially determined in peripheral blood of 62 Thai children with dengue hemorrhagic fever/dengue shock syndrome aged 4-12 years and 59 age-matched normal controls. The studies were performed on febrile stage, 1st and 2nd day of subsidence of fever (shock stage), 3rd and 4th day of subsidence of fever (early convalescent stage) and once again at the recovery stage (approximately 14-18 days after subsidence of fever).

The study revealed that the NK cell activity was slightly increased at febrile stage, reached the peak on the 1st day of shock and returned to normal thereafter. To the contrary, the level of HNK-1⁺ cells, which exhibited almost all NK and killer cell functional activities, was significantly decreased at the febrile stage on and the 1st day of shock and returned to the normal level 2 days later. Thus, the NK cell activity, on the per-cell basis, was significantly increased in the early disease stage when compared to that of the later period of the disease and of the normal controls. The study also revealed that patients with grade II and grade III of disease severity exhibited comparable both the HNK-1⁺ cell levels and the NK cell functional activity. These results suggest that natural killer cells were active in defense against dengue virus infection and might play some role in the pathogenesis of dengue hemorrhagic fever/dengue shock syndrome.