Kutapressin for Chronic Fatigue Syndrome

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Kutapressin (KU: Schwarz Pharma, Milwaukee, WI) is a prescription drug consisting of processed extract from porcine livers that contains peptides; it has been used in the treatment of patients with herpes zoster, keloids, seborrhea, other skin diseases and neurasthenia.

More recently, results of uncontrolled studies have indicated that treatment with KU results in abatement of symptoms of many patients with chronic fatigue syndrome (CFS). One large study found evidence of reactivation of human herpesvirus type 6 (HHV-6) in many patients with CFS. Moreover, HHV-6 DNA was detected by southern blot analysis in lymphocytes from patients with CFS. Because treatments with KU may have positive clinical effects on patients with CFS and the evidence that CFS is associated with reactivation of HHV-6, we investigated the possibility that KU might have direct activity against HHV-6.

KU that was free of phenol was dissolved in tissue culture medium (RPMI 1640 supplemented with 10% fetal calf serum and antibiotics) for in vitro studies. A human T lymphocyte cell line (HSB-2) was infected with HHV-6.

KU blocked HHV-6 (variant A, GS strain) infection of HSB-2 cells most effectively at doses of 300 and 500 ug/mL. These doses of the drug were not toxic to the cells. Inhibition of HHV-6 infection (1,000
TCID50) was most effective (>95%) when cells (>106/mL) were pretreated with KU overnight, prior to viral infection, and then were maintained in the presence of KU throughout the experiment (14 days after infection).

In addition, inhibition (>80%) of HHV-6 infection was observed when HSB-2 cells were first infected with 1,000 TCID50 of HHV-6 and were then maintained in the presence of 300- and 500- ug doses of KU. When 300 and 500 ug/mL doses of KU were added to cells 3 days after the start of infection with HHV-6, it inhibited only 22% and 33% of viral infection, respectively. When the cells were simultaneously treated with virus and 300 and 500 ug/mL of KU, ~90% of HHV-6 infection was inhibited.

These data show that KU is a potent inhibitor of HHV-6 infection. Although the mechanism of HHV-6 inhibition by KU is under investigation, electron microscopic examination of cells treated with KU prior to HHV-6 infection revealed abundant extracellular virus particles, which suggests inhibition of viral attachment and penetration