MP3 **ROLE OF HISTONE DEACTYLASE (HDAC) INHIBITORS IN ADULT T-CELL LYMPHOMA/LEUKEMIA (ATL)**

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Purpose of Study ATL is a peripheral T-cell neoplasm (PTCL) associated with human T-cell lymphotropic virus-1 (HTLV-1) infection. Currently there is no established therapy for relapsed/refractory disease. Initial in-vitro studies of HDAC inhibitors showed selective apoptosis of HTLV-1 infected T cell lines. In phase II trial for relapsed/refractory PTCL, 2 patients had EBV and 1 patient had HBV reactivation. It was unclear if this was from HDAC induced immunosuppression or direct promotion of viral replication or underlying disease process. All HDAC inhibitors trials in last 6 years excluded ATL patients although they are approved for this disease. We here describe our experience of 3 patients with relapsed/refractory ATL treated with HDAC inhibitor romidepsin.

Methods Used Chart review of patients with relapsed/refractory ATL treated with romidepsin at King's County Hospital.

Summary of Results Case 1: 43 year old male with acute ATL who progressed on EPOCH after 4 cycles. Romidepsin was started at 14 mg/m² IV Day 1, 8, 15 Q28 days. He tolerated cycle 1 well but continued to have progressive disease. Patient died 40 days after initiation of therapy from infection.

Case 2: 37 year old male with acute ATL who had disease progression on EPOCH×2 cycles. He was started on romidepsin 10 mg/m² IV (dose reduced due to T. bili 3.5 gm/dl). After first dose, his platelets dropped to 20 k/mm³ necessitating treatment delay and dose reduction to 6 mg/m². He had temporary response as evidenced by reduction in WBC count from 103 kmm³ to 5 k/mm³ and improvement in liver function. He only received 1 cycle and died on Day 50 from disease progression.

Case 3: 47 year old male with ATL lymphoma initially treated with CHOP×6 cycles and relapsed after 1 year with peripheral lymphocytosis to 57 k/mm³ and diffuse lymphadenopathy. He received ICE×2 cycles with progressive disease. He was started on romidepsin 14 mg/m². He received 1 dose and had Grade IV anemia/thrombocytopenia. He developed urosepsis and expired on Day 20.

Conclusions In our small experience of romidepsin in relapsed/refractory ATL, patients appear to have modest response rates and higher rate of cytopenias when compared to other PTCL subtypes in clinical trials. Given the concerns for viral reactivation and lack of data for use of romidepsin in ATL, it should be used cautiously.