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Vincristine Side Effects with Concomitant Fluconazole Use during Induction Chemotherapy in Pediatric Acute Lymphoblastic Leukemia

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As a mainstay of treatment for acute lymphoblastic leukemia (ALL), vincristine's side effect profile is well known. Parallel administration of the antifungal fluconazole has been shown to interfere with the metabolism of vincristine, potentially resulting in increased side effects. We conducted a retrospective chart review to determine whether concomitant administration of vincristine and fluconazole during pediatric ALL therapy impacted side effects of vincristine, namely, hyponatremia and peripheral neuropathy. We also evaluated whether the incidence of opportunistic fungal infections was impacted by fluconazole prophylaxis. Medical charts of all pediatric ALL patients treated with induction chemotherapy at Children's Hospital and Medical Center in Omaha, NE from 2013-2021 were retrospectively reviewed. We found no correlation between fluconazole use and increased incidence of peripheral neuropathy or hyponatremia. Additionally, the rate of fungal infections was not impacted by fluconazole prophylaxis. Empiric fungal prophylaxis with fluconazole during pediatric ALL induction, although safe, may not be necessary.