Cidofovir in the Treatment of BK Virus–Associated Hemorrhagic Cystitis Following Hematopoietic Stem Cell Transplantation; A Medication Use and Safety Analysis

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BK virus hemorrhagic cystitis (BKV-HC) is a complication following allogeneic hematopoietic stem cell transplant (AlloHCT) for which optimal management is uncertain. Intravenous (IV) and intravesicular (IVES) cidofovir have been used with varying degrees of success in small case series of six to 33 patients. While some series have investigated side effects, none have examined medication errors (Fig 1).

INTRODUCTION

Background

● Retrospective single center case series of Allo HCT patients with BKV-HC from 2018-2022 at urban center in Detroit, MI.

METHODS

Objective

● Determine instances of Cidofovir medication errors and perform root cause analysis to determine contributing factors. Describe efficacy of CDV for BK-C.

RESULTS

• In the case series, one in three patients experienced a ME.

CONCLUSIONS

DISCUSSION

• Six patients received Cidofovir (Four IV, Two IV and IVES)
• Median BKV-HC grade was 2.5, three patients had BK viremia
• Five patients had microscopic resolution of hematuria. However, four of the six patients died and one patient had recurrence of BKV-HC within 90 days
• There were two MEs, one near miss of an incorrect IV order for IVES route, and one major safety event where IVES was administered IV.
• RCA analytics revealed multiple contributing factors including similarity in dosing and pump library designation.

CONCLUSIONS

• In the case series to describe medication errors for CDV treatment of BKV-HC, one in three patients experienced a ME.