ELSEVIER

Blood 142 (2023) 2357–2358

The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

903.HEALTH SERVICES AND QUALITY IMPROVEMENT -MYELOID MALIGNANCIES

No Place like Home: Home-Based Intravenous Arsenic Trioxide for the Treatment of Acute Promyelocytic Leukemia (APL)

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Introduction: APL has transitioned from a highly fatal malignancy to a disease that is curable with a combination of all-trans-retinoic acid (ATRA) and arsenic trioxide (ATO). Intravenous (IV) administration of ATO remains the standard of care for consolidation, however, its use is associated with long infusion times, electrolyte disturbances, and QTc prolongation that has historically required frequent outpatient infusion center administration and monitoring. Following induction, patients receive a cumbersome schedule of ATO through daily infusions 5 days each week (typically Monday-Friday) 4 weeks on 4 weeks off for 4 cycles. Oral formulations of ATO are poorly water soluble, have not demonstrated adequate absorption in the gastrointestinal (GI) tract leading to significant GI upset and are not approved for use in the United States. Beginning in 2020, patients treated at our institution were given the option of receiving ATO at home through a partnership via Qualitas Specialty Pharmacy of RWJBarnabas Health. This retrospective review evaluates the feasibility, safety, and efficacy of administration of ATO in the home infusion setting for patients with APL receiving ATO consolidation.
Methods: Through retrospective chart review, we evaluated patients who received consolidation therapy of ATO through home infusion from 2020-2023. Eligible patients included those with an ECOG of <2, absence of baseline QTc prolongation (defined as >500ms), and patients without significant kidney dysfunction or hepatotoxicity at baseline. We evaluated each patient for adverse effects such as QTc prolongation, electrolyte disturbances, liver function test (LFT) abnormalities, neutropenic fever, bacteremia, unplanned Emergency Room (ER) or urgent care visits, and unexpected hospitalizations (via Common Terminology Criteria for Adverse Events version 5).
Results: Fifteen patients aged 19-79 (median = 43) were reviewed with 60% being male and 40% female. Sixty percent had a baseline ECOG 1 and 40% had an ECOG 0. Twenty percent of patients had a prior malignancy (n=3). Eighty percent of the patients experienced grade (gd) 1-3 electrolyte abnormalities (47% gd 1 hyperphosphatemia, 13% gd 1 hyperkalemia, 7% gd 2 hyperkalemia, 7% gd 3 hyperkalemia, 13% gd 1 hypokalemia, 13% gd 1 hypermagnesemia, 7% gd 3 hypermagnesemia, 7% gd 1 hypomagnesemia, 33% gd 1 hypernatremia, 33% gd 1 hyponatremia, & 7% gd 2 hyponatremia). Of the 15 patients receiving treatment, 27% experienced gd 1 alanine aminotransferase (ALT) increase, 13% of patients experienced gd 1 aspartate aminotransferase (AST) increase, and 7% of patients experienced gd 2 hyperbilirubinemia. For QTc prolongation, 53% of patients experienced gd 1 prolongation, 7% of patients experienced gd 2 prolongation, and 13% of patients experienced gd 3 prolongation. One out of the 15 patients experienced treatment delays due to QTc prolongation. While forty percent of patients visited either the ER and/or urgent care during consolidation therapy, no visits were deemed therapy related. Reasons for urgent evaluation included infections (n=3), vertigo (n=1), low back pain (n=1), facial numbness (n=1), fall (n=1), abdominal pain (n=1), and hemorrhoidal bleeding (n=1). Two patients were hospitalized, due to a renal infarct (n=1) and a subdural hematoma after a fall (n=1). None of the 15 patients experienced febrile neutropenia/bacteremia while receiving consolidation therapy. Of the 11 patients who completed consolidation at the time of this abstraction, all (100%) had complete remission demonstrated on post-consolidation bone marrow. One of the 11 patients relapsed within 6 months of consolidation; however, is now in remission following two additional consolidation courses and a bone marrow transplant. Four patients have not yet completed four cycles of ATO consolidation. One patient was transitioned from home infusion to clinic treatment due to out-of-pocket cost.

Conclusions: Our study demonstrates that home infusion of ATO is both safe and highly effective for patients. Therapy was well tolerated with predictable and manageable toxicity. Prospective studies are needed to evaluate the efficacy and safety in comparison to patients receiving ATO in the infusion center as well as to assess patient-reported and cost outcomes. Given the safety profile of home-based ATO, we have implemented at home ATO consolidation as standard therapy for all eligible patients.

Disclosures Evens: *Novartis, AbbVie, Pharmacyclics, Seattle Genetics, Hutchmed, Incyte, Daiichi Sankyo, Epizyme; Curio, Cota, Patient Power, Curio Science, OncLive, Research to Practice:* Consultancy; *ORIEN, Leukemia & Lymphoma Society.:* Other: grant/research support, Research Funding. **Palmisiano:** *Abbvie:* Consultancy, Research Funding; *Rigel:* Consultancy; *Genentech:* Research Funding.

https://doi.org/10.1182/blood-2023-190597