

## SHORT COMMUNICATIONS

### A Case of Azacitidine-Induced Toxic Erythema of Chemotherapy

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#### INTRODUCTION

Myelodysplastic syndromes (MDS) are a heterogeneous group of disorders, recognized in a clinical setting by a decrease in bone marrow function and characterized by chronic cytopenias with approximately one-third of patients progressing to acute myeloid leukemia (AML).<sup>1</sup>

In recent years, the chemotherapy agent azacitidine has been shown to be an effective treatment for MDS, increasing overall survival and lowering the rate of progression to AML.<sup>2</sup> Azacitidine is a DNA hypomethylating agent that acts by inhibiting DNA methyltransferase, thereby reactivating normal hematopoiesis.<sup>3</sup> The most common adverse reactions include: injection site reactions, gastrointestinal issues, and cytopenias.<sup>4</sup> Adverse events are expected with treatment initiation, but they have been found to improve over time. Current evidence recommends continuing therapeutic dosages of azacitidine despite side effects, as most side effects can be managed throughout the course of treatment.<sup>4</sup> Adverse events may be managed with dosing delays/reductions, blood transfusions, and antibiotics for severe cytopenias, anti-emetics, laxatives and anti-diarrheals for gastrointestinal issues, and

topical corticosteroids and/or anti-histamines for injection site reactions.

Toxic Erythema of Chemotherapy (TEC) is a well-described spectrum of overlapping toxic reactions to chemotherapy, most often associated with use of cytarabine, anthracyclines, 5-fluorouracil, capecitabine, taxanes, and methotrexate.<sup>5</sup> TEC is clinically characterized by painful erythematous, violaceous, and/or edematous plaques of the hands, feet, and intertriginous regions that may have a dusky appearance and develop bullae with subsequent erosions.<sup>5</sup> However, TEC following azacitidine therapy has not been reported. Here we present a rare case of azacitidine-induced TEC.

#### CASE REPORT

An 83-year-old female presented to our practice with diffuse, scaly, erythematous papules coalescing into plaques throughout her body, sparing the face, scalp, and genitals (Figure 1). The lesions were severely pruritic and had been present for 2 months, with prominent involvement of her arms, trunk, and back. Her past medical history was significant for MDS for 3 years, controlled on monthly azacitidine, until transformation to AML due to missing 2 cycles of treatment.

**Figure 1:** Scaly erythematous plaques on right arm (biopsied).



The patient was seen by another dermatologist 2 weeks after the rash appeared. The lesion was biopsied, showing perivascular and granulomatous dermatitis, consistent with a drug reaction. The patient was given triamcinolone acetonide injections with daily mupirocin for open lesions and referred to our clinic. Upon examination and biopsy review, the patient was diagnosed with TEC due to azacytidine. She was prescribed Clobetasol spray twice daily for 2-4 weeks. The patient was continued on azacitidine, without change to the treatment regimen, and the lesions began to diminish following the appropriate topical therapy.

## DISCUSSION

Many conditions fall within the spectrum of TEC, including erythrodysesthesia, acral erythema, hand-foot syndrome, toxic erythema of the palms and soles, eccrine squamous syringometaplasia, epidermal dysmaturation, and neutrophilic eccrine hidradenitis (NEH).<sup>5</sup> While azacytidine-associated TEC has not previously been reported, there was a single report of decitabine-associated NEH.<sup>6</sup> Both chemotherapies are cytidine analogs acting as hypomethylating agents, and both have been approved for the treatment of MDS and AML.

TEC is usually self-limited and resolves after desquamation and post-inflammatory hyperpigmentation.<sup>5</sup> Therapeutic options are nonspecific and primarily palliative in nature (cool compresses, analgesics, bland emollients, topical corticosteroids, and topical antibiotics or ointments for erosions).<sup>5</sup> The role of hypomethylating agents in MDS and other hematological conditions is significant, thus clinicians should remain aware of this complication and its possible therapeutic implications.

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**References:**

1. Raj K, Mufti GJ. Azacytidine (Vidaza®) in the treatment of myelodysplastic syndromes. *Ther Clin Risk Manag.* 2006;2(4):377-388.
2. Fenaux P, Mufti GJ, Hellstrom-Lindberg E, et al. Efficacy of azacitidine compared with  
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that of conventional care regimens in the treatment of higher-risk myelodysplastic syndromes: a randomized, open-label, phase III study. *Lancet Oncol.* 2009;10(3):223-32.

3. Silverman LR. DNA methyltransferase inhibitors in myelodysplastic syndrome. *Best Pract Res Clin Haematol.* 2004;17(4):585-94.
4. Almeida AM, Pierdomenico F. Generalized skin reactions in patients with MDS and CMML treated with azacitidine: Effective management with concomitant prednisolone. *Leuk Res.* 2012;36(9):e211-3.
5. Bologna JL, Cooper DL, Glusac EJ. Toxic erythema of chemotherapy: a useful clinical term. *J Am Acad Dermatol.* 2008;59(3):524-9.
6. NG ES, Aw DC, Tan KB, et al. Neutrophilic eccrine hidradenitis associated with decitabine. *Leuk Res.* 2010;34(5):e130-2.