

Daptomycin Pulmonary Eosinophilia: Review of Cases and New Hyperacute Syndromic Presentation

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BACKGROUND

- ❖ Daptomycin pulmonary eosinophilia (DPE) has been described as a rare event. Since the Food and Drug Administration (FDA) first described the syndrome which occurs about 3 weeks after starting the drug, it continues to be misdiagnosed.
- ❖ Most outpatient antibiotic treatment (OPAT) programs focus on screening for CPK elevations. We describe an unusual increase in DPE at our center including acute reactions on re-exposure to daptomycin.

METHODS

- ❖ Retrospective review from local VA pharmacy and OPAT database of adverse drug events (ADE) with daptomycin from 2010 to 4/2018.
- ❖ Data evaluated includes; age, gender, weight, body mass index (BMI), daptomycin dosing, indication for use, duration of therapy, time to symptom onset, Creatinine clearance, white cell count (WCC), %eosinophilia (%eos), admission to intensive care unit (ICU), and clinical outcomes or interventions.

RESULTS

- ❖ There were 363 unique initiations of Daptomycin in the time period. There were 17 DPE (5%) and 3 CPK (0.6%) events in that time period.
- ❖ The medians for all DPE was; Age 68 years (range 55-95), BMI 29 m/kg² (range 21-49.5), daptomycin dose 500 mg (> 7 mg/kg), baseline CrCl 35.5 ml/min, eosinophilia at onset of DPE 9% (8-44%), and duration of therapy to onset was 21 days (1-33).
- ❖ All recovered on removal of daptomycin, but 5 patients required adjunctive corticosteroid therapy.
- ❖ Four patients had a severe and novel hyperacute DPE within 5 days of a new initiation of daptomycin therapy. All 4 patients had prior exposure to daptomycin in the last 12 months. They presented with hypoxic respiratory failure, abnormal chest xrays and/or CT chest scans, with preceding systemic fevers and fatigue after the first dose. All had low grade %eos (3-5%) on prior use, and all recovered rapidly with discontinuation of daptomycin.

Table 1: Patients with severe and novel Hyperacute DPE within 5 days of new initiation of Daptomycin

Patient #	% Eos re-exposure	Duration for initial exposure (days)	Duration to symptom onset (days)
13	25	42	2
17	18.5	56	3
18	20.1	42	5
19	18.2	14	4

Figure 1: Patient 17 baseline chest x-ray 4 weeks before re-exposure

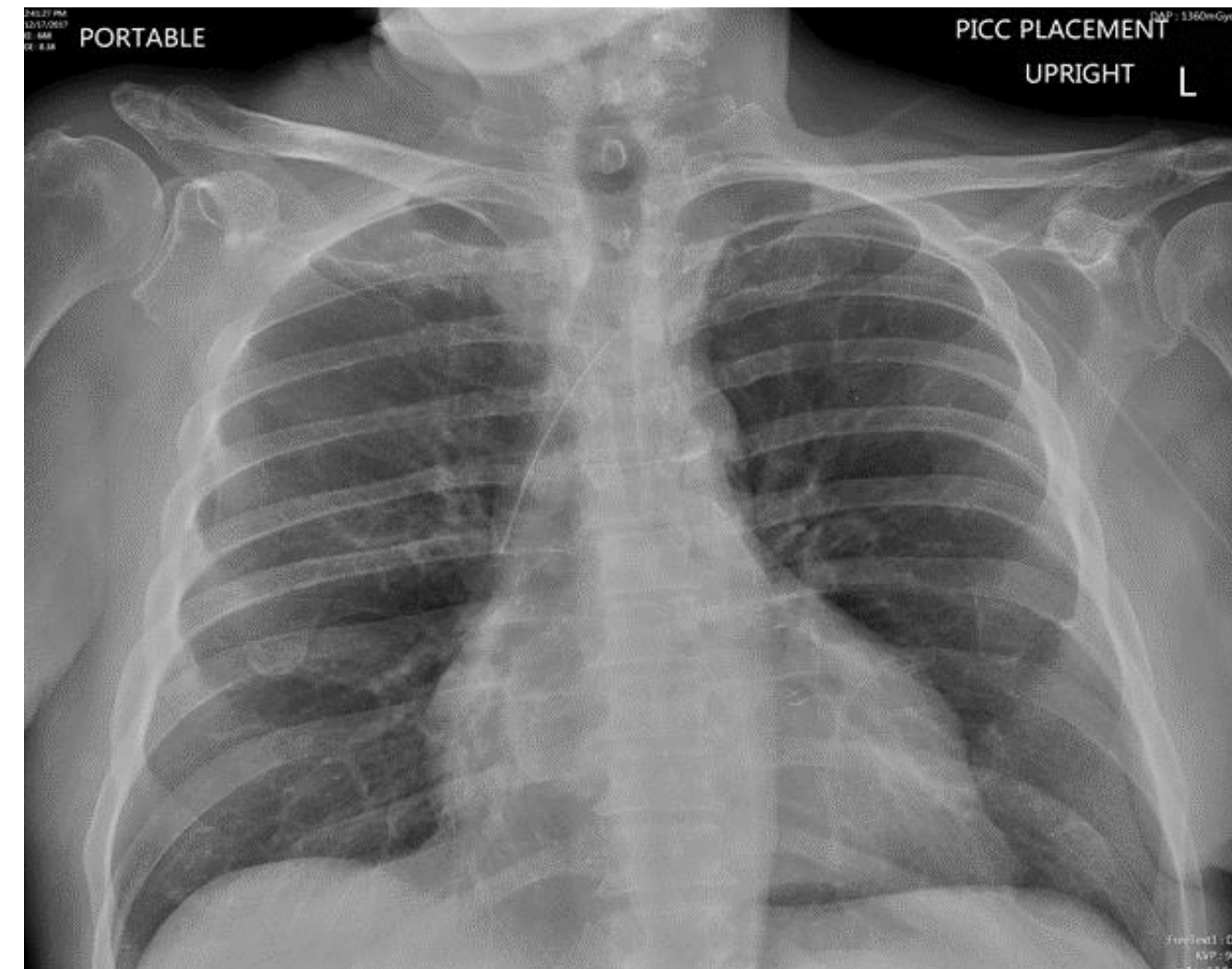


Figure 2: Patient 17 lung CT after re-exposure

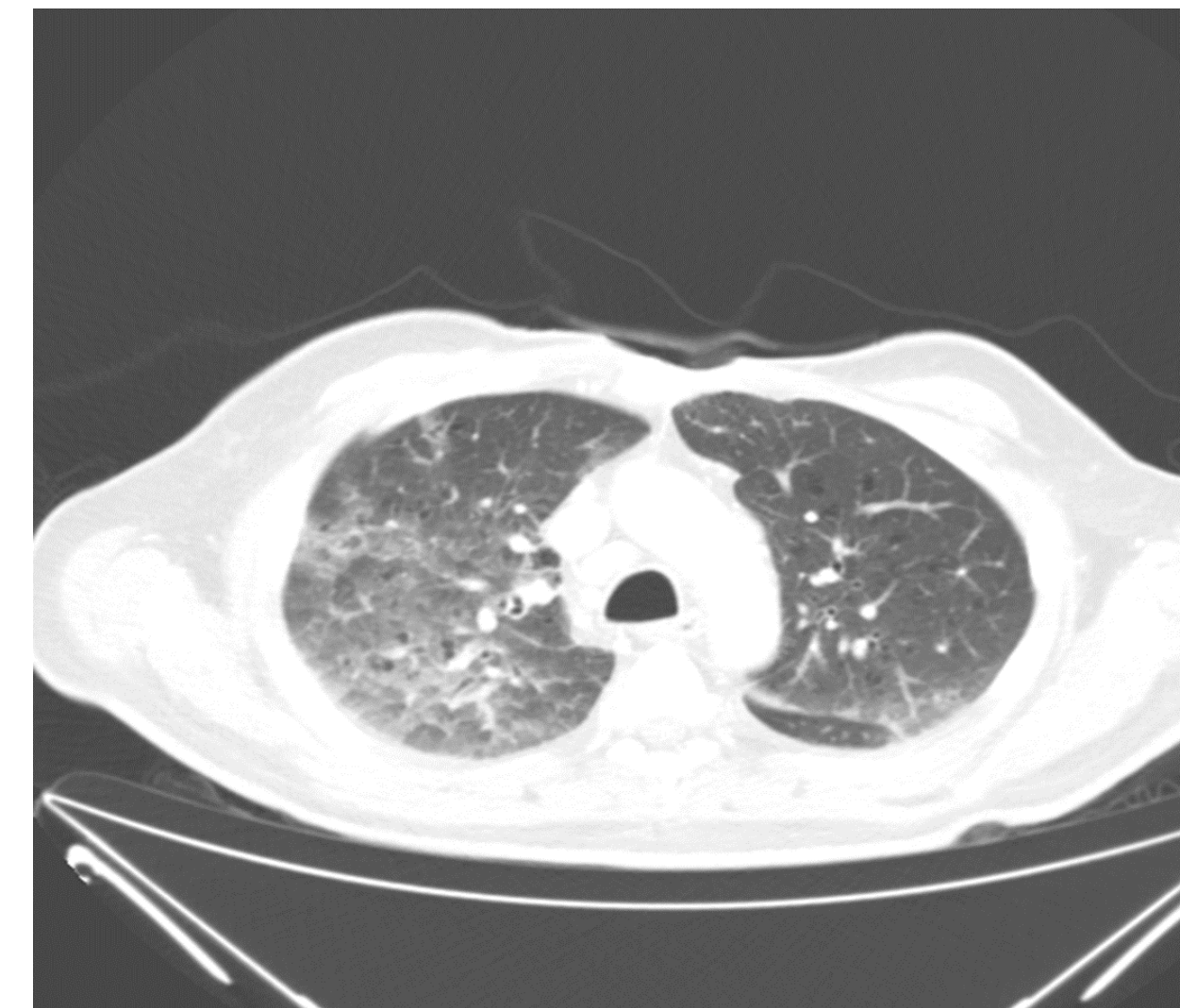
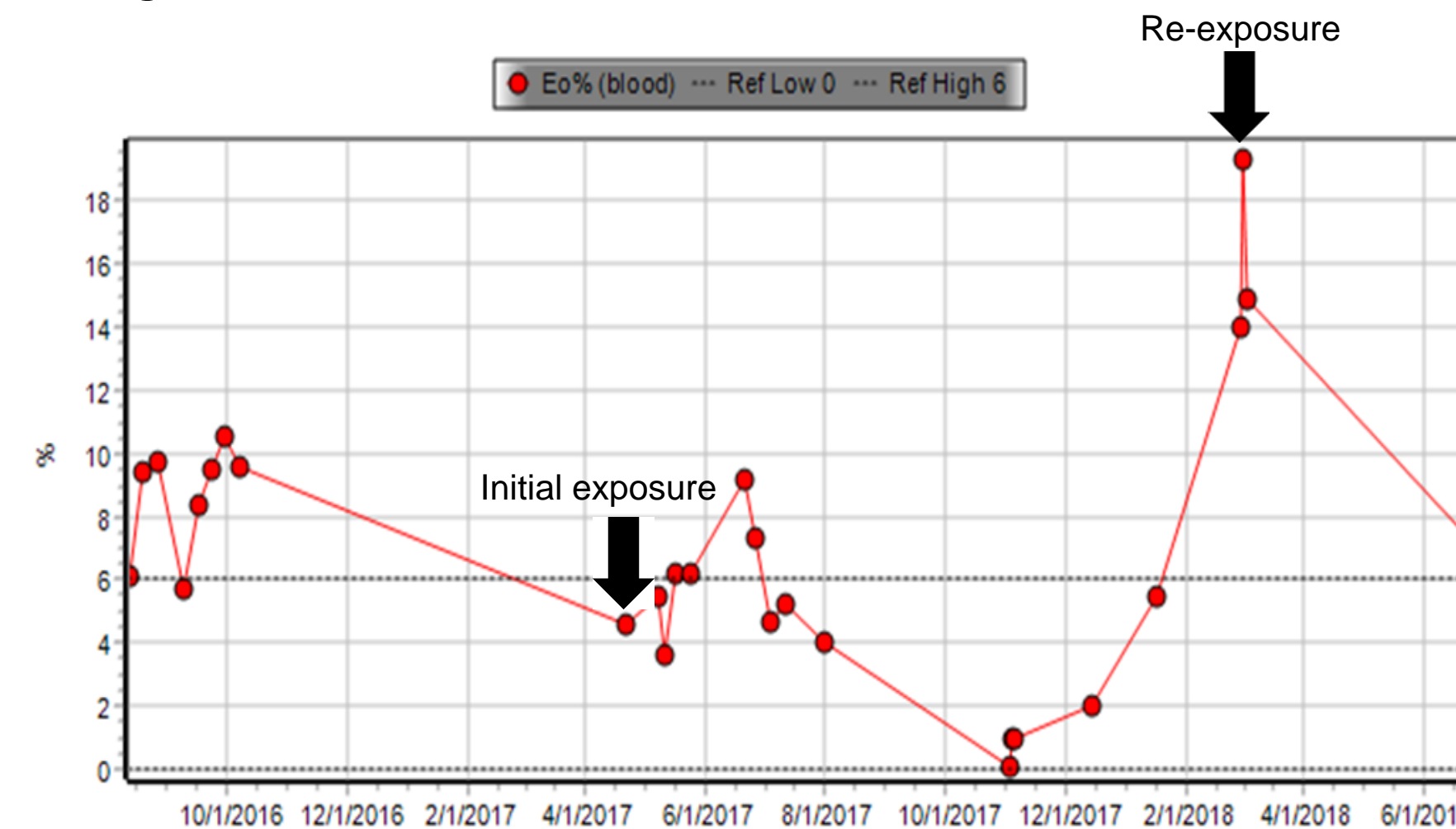


Figure 2: Patient 17 %Eos from initial exposure to re-exposure



CONCLUSIONS

- ❖ DPE may be underreported and is associated with doses of 500 mg or > 7 mg/kg, with CrCl <35 ml/min and older age.
- ❖ Of concern are the new cases of hyperacute DPE within 5 days of re-exposure to daptomycin that we have seen, who had prior low-grade eosinophilia.
- ❖ Close monitoring of these factors may be warranted in at-risk individuals.

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