

Outpatient parenteral antimicrobial therapy (OPAT)-related peripheral eosinophilia as a predictor of hypersensitivity reactions

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Background

The administration of outpatient parenteral antimicrobial therapy (OPAT) has significantly increased in recent decades. OPAT offers many benefits to patients and the health care system. Best practices suggest patients on OPAT require active monitoring for adverse effects of therapy. Asymptomatic eosinophilia is a common finding in patients receiving OPAT. This could be benign or herald allergic drug reactions. Little is known about the practice patterns of OPAT providers in their management of asymptomatic eosinophilia.

This study aimed to assess the opinions and practice patterns regarding asymptomatic eosinophilia among providers managing patients on OPAT in the United States.

Methods

We performed a cross-sectional, one-time, anonymous, self-administered survey of providers who care for patients receiving OPAT. The survey was posted in the discussion forums of the Infectious Diseases Society of America (IDSA) and shared via emails to twenty ID departments in the US. Data was collected from June to July 2021. Survey responses were analyzed using Python for statistical analysis.

Results

Sixty-five respondents completed the survey. Thirty-six percent of respondents reported that eosinophilia occurs in up to five percent of their patients, with an average time of 1-2 weeks between antibiotic exposure and the development of eosinophilia Fig (1). Sixty-nine percent of respondents reported that they do not change their laboratory monitoring frequency in patients with asymptomatic eosinophilia. Fifty-two percent of respondents would discontinue/switch antibiotics only if the patient developed complications Fig (2). The risk of subsequent hypersensitivity reaction/end-organ damage was less frequently noted, as seventy-five percent encountered it in <10% of eosinophilia cases Fig (1). In our study, only 29.2% answered that an ID consult is required for OPAT initiation at their institution and 24.6% of respondents replied that they had no protocols in place to deal with potential OPAT complications. Less than half of respondents reported having policies and procedures to deal with allergic reactions and/or abnormal laboratory results in OPAT.

Figures

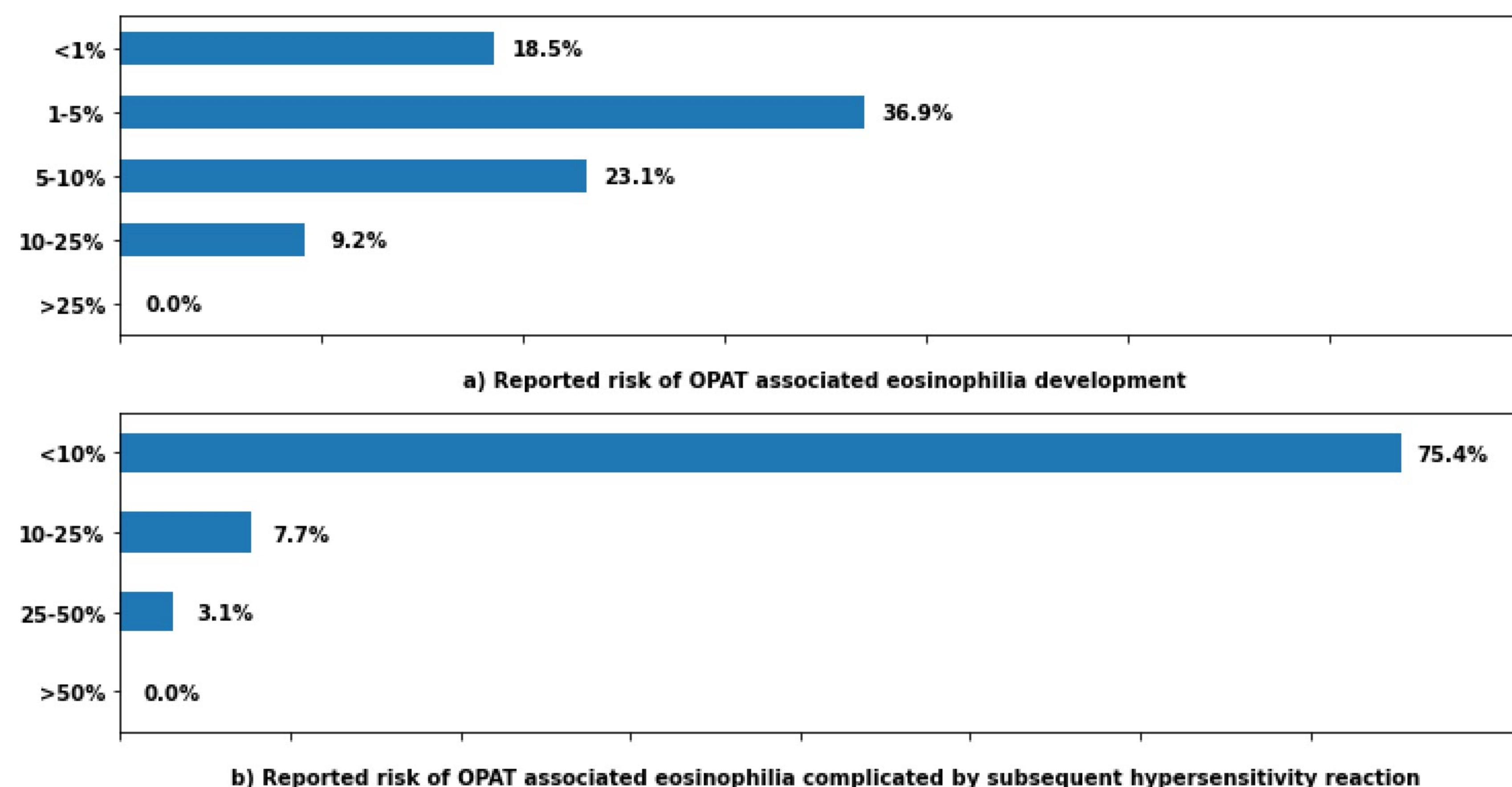


Figure 1: Reported risk of OPAT associated peripheral eosinophilia with subsequent hypersensitivity

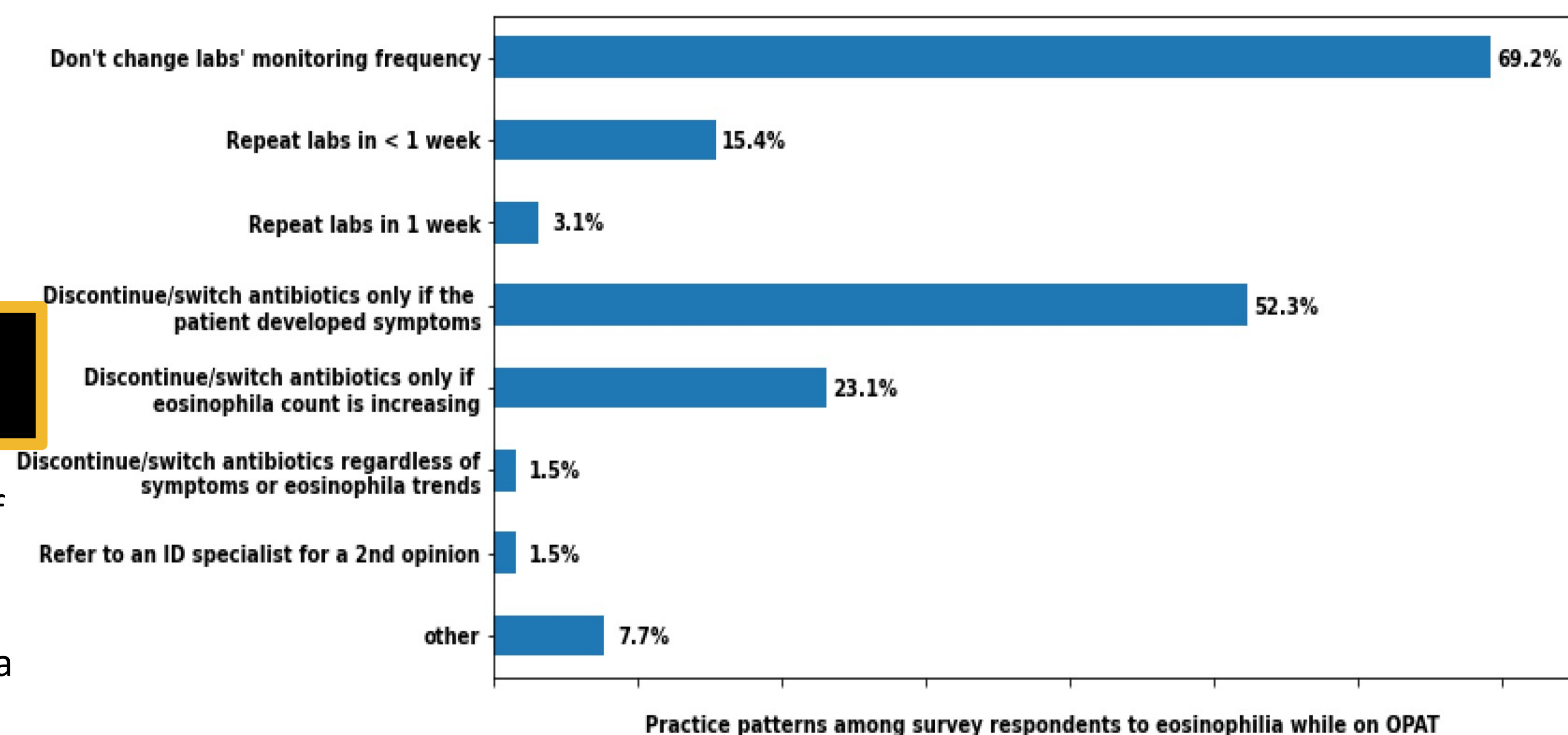


Figure 2: Practice patterns among survey respondents to eosinophilia while on OPAT

Citations:

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Discussion

Outpatient parenteral antimicrobial therapy (OPAT) has significantly changed clinical practice.¹ We found that providers were in favor of ID consultation before OPAT initiation. However only 29.2% answered that ID consult was a requirement prior to OPAT initiation at their institution, despite the strong recommendation from the IDSA OPAT Guidelines.²

Our data suggest that providers encountered eosinophilia and subsequent hypersensitivity reactions less frequently than what is reported in literature. In a prior prospective study, eosinophilia development was reported in 25% of patients. In most cases, however, eosinophilia was self-limited. Eosinophilia was detected within an average of 15 days after OPAT initiation. Subsequent hypersensitivity reactions were noted in 30% of all eosinophilic cases, with a correlation between the risk of hypereosinophilia and the subsequent risk of developing rash and renal impairment.³

Currently, there are no definite guidelines of what to do with asymptomatic eosinophilia cases. In our study, the majority of providers reported that they do not change their laboratory monitoring frequency in patients with asymptomatic eosinophilia. However, more than 50% of respondents reported that they would consider changing antibiotics if the number of eosinophils continues to increase. It was suggested before that isolated eosinophilia as a laboratory finding in the setting of IV antibiotics can be managed by close monitoring of signs and symptoms with regular laboratory follow-up.⁴ More than 50% of respondents in our study would discontinue/shift antibiotics if the patient had symptoms (rash, itching or organ dysfunction).

Conclusion

Per our survey results, OPAT-related eosinophilia is common, though subsequent hypersensitivity/life-threatening reactions are not. Most surveyed ID providers monitor asymptomatic eosinophilia without changing antibiotics. Further prospective studies are needed to understand the course and best practice for asymptomatic eosinophilia among patients on OPAT.