

delivery. The role of the microbiome in propagation of eosinophilic diseases clearly merits further study.

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RE: Alcohol-induced respiratory symptoms are common in patients with aspirin exacerbated respiratory disease

TO THE EDITOR:

I read with great interest the recent article by Cardet et al¹ regarding the prevalence of alcohol-induced symptoms in patients with aspirin-exacerbated respiratory disease (AERD) wherein the authors noted, with decreasing frequency, patients' response to red wine, beer, white wine, and liquor. The authors further note that they cannot explain the mechanism behind this in that it does not appear related to sulfites or polymorphisms in acetaldehyde dehydrogenase. I submit that this effect may be due to the polyphenols present in many alcoholic beverages. Resveratrol, one of many phenolic compounds found in red wine derived from the skins of the grape has been investigated for its beneficial cardiovascular effects and its likely contribution to the observed French paradox of a

healthy populace despite a high-fat diet.² Other phenolic compounds have been found in beer, derived from two of its main ingredients, barley and hops.³ The concentration in beer, however, may be variable because brewers often seek to reduce the barley-derived polyphenols through fining and filtering to prevent chill haze.⁴ However, hops, used for their preservative and bittering properties, contain approximately 14.4% polyphenols and often are added just before fermentation (ie, dry hopping) thus bypassing earlier attempts to reduce these phenolic compounds.³ Regarding hard liquor, the substrate of the fermentation process (eg, corn, juniper, potato), and subsequent distillation may substantially reduce the presence of any polyphenols compared with red wine and beer.

The importance of this is that resveratrol and these other phenolic compounds have proven to be inhibitors of COX-1, which is essentially the pharmacologic mechanism by which aspirin and other nonsteroidal anti-inflammatory drugs induce the acute exacerbations in patients with AERD. Because the relative abundance of phenolic compounds in red wine, beer, and liquor directly mirrors the rates and severity of symptoms to these beverages in the AERD population as described by Cardet et al,¹ it would be reasonable to consider polyphenols as the likely source of the symptoms in these patients. It would be intriguing to further refine the data to determine if this susceptibility to certain alcoholic beverages is linked to the grain of origin, hop content, or perfermentation storage (steel vs wood barrel contribution of phenols). Although this issue may be further obscured by the reported potential maize and/or lipid-transfer-protein allergy,⁵ exploration of these contributors may elucidate the mechanism of reaction in AERD.

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