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The Effect of Antibiotic Prophylaxis Guidelines on Incidence of Infective Endocarditis

(A letter to the Editor in response to the paper published on-line in the CJC by Mackie *et al* entitled “Infective Endocarditis Hospitalizations Before and After the 2007 American Heart Association Prophylaxis Guidelines” and the accompanying editorial by Morris and Web)

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To the Editor

We congratulate Mackie et al.¹ on their excellent paper that demonstrated no significant increase in infective endocarditis (IE) following the 2007 AHA guidelines that recommend discontinuation of antibiotic prophylaxis (AP) for “moderate-risk” patients.

We note, however, that the falls in native valve predisposing conditions (non-rheumatic valvular disease plus chronic rheumatic heart disease) and streptococci-associated IE - the groups most likely to be affected by stopping AP for moderate-risk patients, plateau or even rise after 2007 (Figure 1, data extracted using Digitizelt).

Lack of prescribing data makes it difficult to evaluate the presence or absence of a causal relationship between changes in AP guidelines and the magnitude and timing of changes in IE incidence. Nonetheless, most studies assessing the effect of restricting AP to those at high-risk show no, or minimal, impact.

The Morris and Webb editorial² overviews the AP controversy, including our paper showing an increase in IE incidence following the 2008 NICE guidelines recommending AP cessation.³ While other studies examined the cessation of AP for moderate-risk patients, our studies are the only ones that examined cessation of AP for those at high-risk as well. Furthermore, our incidence data were coupled with data quantifying the fall in AP prescribing. Although we agree it is unlikely that all the IE incidence increase we observed was due to guideline change, we did not find

evidence that population-based changes confounded the results – as the editorial suggests.

Most studies examining the effects of restricting AP to high-risk patients support the AHA guidelines. Our data also support these guidelines but suggest that stopping AP altogether, as occurred in the UK, could be a step too far and carry significant risk for patients.^{3, 4} While the 2015 NICE guideline review referred to in the editorial decided to maintain its guidance, the European Society of Cardiology, who produce guidance for the whole of Europe, examined the same evidence and drew the opposite conclusion - strongly recommending continuation of AP for high-risk patients. The NICE review was controversial in the UK, particularly because it did not appear to consider the risk of its decision for patients.⁴ The result is confusion about which guidelines to follow. Recent changes in UK law, however, require that patients are provided with all the information they need to make a decision for themselves⁴ and this may result in a renewed rise in UK-AP prescribing for those at high-risk.

Figure Legend:

Figure 1. Proportion of cases due to native valve heart disease or Streptococci – from the paper by Mackie *et al*¹

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