

backtracking the emergence of such clones in archival bone marrow material taken during therapy, it will be possible to explore if these second cancers emerge before the initiation of thiopurine therapy.<sup>4</sup> Second, if de Boer et al are correct in their hypothesis, we would expect a reduced level of DNA-6TGN incorporation in the HGPRT-deficient t-AML/MDS clones compared with the normal bone marrow cells when such cases occur during thiopurine therapy. Using highly specific techniques for cell sorting<sup>6</sup> and sensitive methods for quantification of DNA-6TGN,<sup>1</sup> it will be feasible to explore if the t-AML/MDS cases that arise during thiopurine therapy contain lower DNA-6TGN levels than the remaining normal nucleated bone marrow cells.

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## To the editor:

### A case of apples and pears?

Stasi et al report a valuable systematic review and meta-analysis to conclude that treating *Helicobacter pylori* is worthwhile in immune thrombocytopenic purpura (ITP).<sup>1</sup> However, we have several reservations about the methodology of this review, which may have led to misleading conclusions.

First, the search strategy was incomplete. Including textwords as well as MeSH headings into the search strategy reveals 38 extra possible studies for inclusion.<sup>2</sup> The Cochrane Handbook<sup>3</sup> also recommends searching conference abstracts as these may provide studies in prepublication and unpublished studies, which can have significant positive and negative effects on conclusions.<sup>4</sup>

Second, the exclusion criteria of this review may have led to bias. No reason is given why studies with fewer than 15 subjects were excluded. Much relevant research has been undertaken in Japan; the exclusion of foreign language studies may have excluded relevant papers, which tend to be negative.<sup>5</sup> Excluding studies that only diagnosed *H pylori* infection serologically may also have excluded useful higher quality studies. The quoted reference<sup>6</sup> describes enzyme-linked immunosorbent assay (ELISA) tests with good sensitivity and specificity. If the authors were concerned about these they could have been examined in a subgroup analysis. The authors thereby excluded a randomized trial,<sup>7</sup> which may be less biased than observational studies. More information could have been provided on quality assessment and its impact on the review's conclusions.

The authors' measures of publication bias do not demonstrate the absence of bias, as the Egger test should not be used when heterogeneity ( $I^2 = 86\%$ ), is present.<sup>8</sup> Visual inspection of the funnel plot does not show the normal inverted V that would be consistent with no publication bias.

Third, we consider that combining studies in a meta-analysis is inappropriate in this area, like combining apples and pears. It would have been more helpful to detail the individual studies especially the control groups, previous treatments and severity of ITP. Egger et al state that there is a danger that meta-analysis of observational data produce

very precise but spurious results and the statistical combination of data should therefore not be a prominent component of systematic reviews of observational studies.<sup>9</sup> The large variation in the study results implies heterogeneity, suggesting either confounding factors, bias, or biologic factors (eg, ethnicity, strain of bacterium), all of which suggest meta-analysis is not appropriate. There seems to have been little attempt to investigate this heterogeneity. Combining observational data by the DerSimonian-Laird method may introduce bias because it increases the weight given to larger studies; in controlled trials larger studies are more precise, but in observational studies they may be more biased.

In summary, we believe the incomplete search strategy and inclusion of several sources of bias compromise the systematic review. The heterogeneity of results obtained implies that meta-analysis should not have been performed. We agree with the authors that further randomized controlled trials are required in this important area.

**Mark Crowther, Mark A. Vickers, and Alison Avenell**

*Contribution:* M.C. and A.A. critically appraised the paper, and all 3 authors wrote the letter.

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## Response

### A case of rich fruit

We thank Mark Crowther and his colleagues for the comments that they have made on our paper.<sup>1</sup> While we welcome their opinions, it is worth noting that systematic reviews and meta-analyses are areas where opinions differ, controversy remains, and comments on published work are common.

Their first point is that our search strategy was incomplete. They observe that a search using both text words and MeSH headings inclusive of conference abstracts results in an increased yield. It is unknown, however, if any of these studies would have been incorporated given our stringent inclusion criteria.

Secondly, Crowther and his colleagues state that our exclusion criteria may have led to bias. While these criteria were clearly delineated and judged by the authors to be clinically and epidemiologically appropriate, we acknowledge the restrictions they may have placed on our review, including the preclusion of potentially valuable data from studies published in non-English language journals and those using serological diagnoses. The former criterion was not possible given our available resources. The latter may have excluded some high-quality studies, but its removal would likely have resulted in the inclusion of many studies of lower quality; the sensitivity and specificity ranges of the enzyme-linked immunosorbent assay (ELISA) test are greater than for the <sup>13</sup>C-UBT test and do not discriminate between patients with active infection and those whose infection has been eradicated.<sup>2</sup>

Their third point relates to homogeneity. We did have reservations about quantitatively synthesizing data because of the heterogeneity of results. However, we thought the studies to be sufficiently similar in scope to justify the pooling of their results. While visual inspection of the funnel plot (Stasi et al, Figure 2) does not show the perfect inverted V consistent with the absence of publication bias, the figure does show some decrease in spread with decreasing standard error. It would be implausible to think that a review such as this would be entirely free of bias. The heterogeneity noted is likely to be the result of small sample sizes (and in this analysis many studies are small) and biologic factors. Importantly, our exploration of this variability uncovered the striking correlation between country-specific infection prevalence and response rate illustrated in Figure 4.<sup>1</sup>

We defend our use of the DerSimonian-Laird method to pool data across studies. Crowther and his colleagues suggest that this method increases the weight given to large observational studies, which may be more susceptible to bias. As a random-effects computation, it gives greater weight to smaller studies than conventional fixed-effects methods.<sup>3</sup> Like most pooling methods, the DerSimonian-Laird method does partly weight studies by sample size, which we feel is appropriate. Although it is possible for large-scale observational studies to be susceptible to greater bias, this tendency is largely based on the methodology used, which was controlled for by the threshold established by our inclusion criteria. Furthermore, our investigation dealt almost exclusively with studies of small numbers of patients within a single center, a situation in which random fluctuation assumes a greater, potentially more dangerous role in impacting results.

In summary, we believe the methodology for our systematic review to be sound and support its finding of *Helicobacter pylori* eradication as a viable, noninvasive, and low-cost treatment for <sup>13</sup>C-UBT-positive adults with immune thrombocytopenia, particularly in countries with a high prevalence of infection pending the outcome of large-scale randomized trials.

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## To the editor:

### Differences between nasal and extranasal NK/T-cell lymphoma

We read with interest the results of the peripheral T-cell lymphoma (PTCL) classification project reported by Au et al, which stated that prognosis of extranodal natural killer (NK)/T-cell lymphoma (ENKL) of nasal origin is different from that of extranasal origin.<sup>1</sup> They further concluded these 2 subtypes of ENKL are different entities.

We principally agree with their conclusion, but the prognostic difference they pointed out needs further estimation. Our data on 150 ENKLs (123 nasal and 27 extranasal)<sup>2</sup> also demonstrate the same results if analyzed as a whole (Figure 1A). However, the proportion of localized versus advanced stage of disease is completely different