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The Chiu/Park scale for grading intestinal ischemia–reperfusion: if it ain't broke don't fix it!

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Sir: We read with great interest the article of Liu et al. [1] published earlier this year in your journal. The paper reports differences in morphology and inflammatory response between control animals and animals undergoing ischemic preconditioning before intestinal ischemia–reperfusion.

For forty years, the scoring system for intestinal ischemia–reperfusion initially proposed by Chiu and later completed by Park et al. [2, 3] has been widely used by researchers. As of November 2009, these two studies have been cited in indexed journals over 830 times (ISI Knowledge, Thomson Reuters). A study comparing three different systems for grading intestinal ischemia–reperfusion injury found the Chiu/Park score to yield the most reliable and reproducible results [4]. We used this grading score and found it very easy to apply and reproduce.

Liu et al. choose to design a “modified Chiu's score” to describe their findings. Although the alterations are major, the authors opt to finally present the results as ‘Chiu's score’ while leaving the detailed description of the grading score as

electronic supplementary information. Moreover, the results are erroneously presented using subdivisions of a discrete variable (e.g. 2.5). The modifications are significant and we believe the resulting system greatly overestimates the morphological changes compared with the original score and generates confusion. Thus, while the entire range from 1 to 3 on the modified scale is easily encompassed by the original Chiu/Park grade 1, the authors' grade 3–5 describes “moderate lifting of the epidermis and shedding of the villus top”, features consistent with Chiu/Park grade 2. Similarly, the authors' grades 6–8 correspond to the grade 4. In this context, the detail that authors always use the term ‘epidermis’ instead of ‘epithelium’ becomes trivial.

Whilst the complex molecular changes triggered by the ischemic preconditioning are acknowledged, we are skeptical that any real morphological differences were apparent, particularly after such a brief observation period. The key difference around which the whole study spins was represented by different ‘enlargement of subepidermal gap’ and ‘epidermis moderately isolated’; thereafter, all the remaining results were correlated with these findings.

Grading the intestinal ischemic injury using the Chiu score, particularly at earlier stages may be subjective and consistency in following the criteria is essential. Small blebs at the villus tip stand for grade 1, although some pathologists claim this may be an artifact or even a normal finding. We assign grade 2 when epithelial detachment is limited to the upper half of the villi and grade 3 if it extends towards the crypt. Isolated denudations of the tips belong to the criteria for the same grade 3 while frequent denudations and loss of villus tissue stand for grade 4 [5]. Villus loss equals grade

5. We believe the original score is robust and succeeds in revealing true differences.

We advocate scores as close as possible to the original scoring, allowing for better comparisons and eliminating ‘the broken telephone effect’. At the same time, we urge readers and reviewers to be more critical in the interpretation of similarly modified “Chiu scores”.

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