

formulations of botulinum A toxin, Botox® and Dysport®, has resulted in confusion over nomenclature (September 1992 *JRSM*, pp 525–9; August 1993 *JRSM*, pp 493–4). We have proposed that two factors account for the differences in the US (Botox®) and UK (Dysport®) formulations of botulinum A toxin; a lack of equivalence of the basic unit of activity (1 unit=1 LD50 in mice) and a marked difference in the potencies for regional chemodenervation (September 1994, *JRSM*, pp 571–572). This explanation has been referred to as *facile*<sup>1</sup> and these authors further suggest (November 1994, *JRSM*, pp 719) that the difference in the measured units of activity for the UK and US formulations is due to whether or not a gelatin stabilizer is used in the assays defining the biologic activity. We have recently published the findings of a study comparing Botox® and Dysport® using a gelatin containing diluent<sup>2</sup>. These results indicate that the missing gelatin hypothesis is probably not correct.

We agree that there is a problem with standardization of the method used to define the basic unit of biologic activity for botulinum toxin. However, we submit that correcting the obvious disparity in the lethality assays performed in the USA and UK does not address the fundamental problem. The real problem is that manufacturers and regulatory agencies have failed to recognize that we are not utilizing the correct end point for assessment of the clinically relevant biologic activity in this case<sup>3</sup>. Ironically, some have suggested that a better name for the current unit of activity defined by the mouse lethality assay is the ‘mickey mole’ (September 1994 *JRSM*, p 572). It makes infinitely more sense to quantify localized denervation to define the basic unit pharmacologic activity when this is precisely the effect responsible for clinical efficacy. Efforts should be focused on standardizing a unit of regional

chemodenervation rather than attempting to correct the problems with the fundamentally flawed approach that utilizes death as the end point to define the pharmacologic activity of botulinum toxins. We would welcome the opportunity to collaborate with our counterparts in the UK to establish a new unit of pharmacologic activity and do away with the ‘mickey mole’.

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**Medical ethics**

It saddens me when I read comments like the following in Mr Hugh Thomson’s letter on medical ethics (December 1994 *JRSM*, p 797): ‘Also, if society wants abortions and euthanasia, then let it appoint executioners to do these jobs’.

Like many doctors and nurses I know, I trust that I will die with dignity, and not have to experience a final illness or accident which is too painful or protracted. I regret that voluntary active euthanasia is still

officially illegal in this country, but I hope that, within the next decade or so, the situation will have changed, so that the privilege which I can enjoy, as a physician, for myself can be shared with loved ones and non-medical friends if that is their specific wish.

I respect the views of those like Mr Thomson who are strongly opposed to euthanasia. I trust that he can understand that the majority of people in this country are like myself, wishing for a ‘good death’—or euthanasia, to use the Greek word—at the appropriate time, and I would hope that, in turn, he could respect our opinions.

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**The plague of Athens**

Dr Theodore Bazas (December 1994 *JRSM*) argues persuasively that the plague of Athens (430–427 BC) was none other than smallpox and that Thucydides failed to comment on post-infectious scarring because ‘it is self-evident that scars are always left after the healing of an ulcer’.

With great respect, I beg to differ. If so astute an observer as Thucydides failed to mention dramatic and disfiguring scars and blindness due to corneal opacities in those who survived the plague of Athens, it can only be that they did not occur and this significantly weakens the case for smallpox.

The case for pulmonary anthrax as a cause for the plague of Athens (McSherry and Kilpatrick, November 1992 *JRSM*, p 713) may be circumstantial, but is none the less strong for Dr Bazas’ erudite comments.

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