

SI units in pathology

A new coherent metric system is gradually being introduced into British life, and we as pathologists will certainly be involved.¹ This system is called internationally SI (Système International d'Unités), and at the moment our main concern is in reporting results of tests in these new units. The other problem of making sure that results in scientific papers are set out in SI units will be discussed in a later issue of the Journal. Recommendations in reporting results on patients have already been given by a working party of the Royal College of Pathologists, and this document is reproduced on pages 818-819 of this issue.

Those of us most concerned in mastering and using SI units will be the chemical pathologists, and the Association of Clinical Biochemists has already produced a bulletin suitable for their use². The haematologists will also be concerned with expressing their test results in SI units, but at the moment those practising other disciplines in pathology will be less involved with the new system.

In the meantime it is most important for pathologists to appreciate that as few changes as possible should be made involving alteration in the numerical value of a result. The new important unit which most concerns us as pathologists is one for 'amount of substance', namely, the mole (symbol mol), and this replaces gramme-molecule, gramme-equivalent, etc: 1 mole of H⁺ weighs 1 g (strictly 1.008 g), 1 mole of H₂ weighs 2 g, 1 mole of H₂O weighs 18 g.

The present first stage recommendations involve no change in units that will mean numerical alteration. The principal points are as follows:

- 1 Correct names and symbols for all units employed according to the nationally and internationally agreed system (for example, gram(me) is g not g. or G or Gm or gm). The spelling gram (milligram etc) is about to be recommended for use in Britain.
- 2 The comma is to be abandoned as a spacer between digits in large numbers, because of its use as a decimal point in continental practice. It should be replaced by the half-space.
- 3 The litre and its submultiples instead of cubic centimetres are accepted as the working units of volume.
- 4 The mole, and its submultiples such as mmol, are to be used as the units for monovalent ions; consequently the equivalent is to be abandoned.

The second stage, which is not being recommended at present, will involve certain numerical changes in values of results, and before this can be implemented laboratory scientists and clinical users must meet and agree. The more important of such changes would be: (1) the artificial '100 ml' would be abandoned as a unit of volume and be replaced by the litre (dm³); (2) the mole would be extended in its use, not only to non-monovalent ions such as calcium, but also to unionized molecules such as urea and glucose.

We hope that general acceptance of this system in Britain will cause no problems, and that it will make communication between pathologists and between them and their clinical colleagues and scientists outside medicine both simpler and less liable to error. The only costs involved will be in altering a number of laboratory report forms when the next time comes round for their reprinting.

References

¹The Use of SI Units. London. British Standards Institution (Publ. PD 5686, 1969).

²Quantities and Units in Clinical Biochemistry (ed. P. M. G. Broughton). London. Association of Clinical Biochemists Technical Bulletin No. 20 (1970).