

PTH reference ranges for Scottish Renal Registry

PTH fragments, derived from the metabolism of PTH, accumulate in renal failure. Despite being called ‘intact PTH’ assays, most of the currently available PTH assays measure not just the whole PTH molecule but fragments as well. Some assays will detect only the larger fragments (7-84), while others will detect smaller ones too. Thus fragments can contribute anything up to 50% of the total PTH measurement in CKD stage 5. There is not yet a recognised international standard against which PTH analysers are calibrated and the reference ranges for the different analysers do not reflect their differing abilities to distinguish between fragments and whole PTH molecules. Clinically this has implications for the management of renal bone disease and makes audit of bone mineral metabolism inaccurate.

To try and address this problem, assay specific target ranges have been devised for each of the analysers in Scotland. They are as follows:

| Method | Equivalent of 2 x ULN | Equivalent of 4 x ULN | Equivalent of 9 x ULN |
|-----------------------|------------------------------|------------------------------|------------------------------|
| Roche Elecsys E170 | 14 | 28 | 63 |
| Abbott Architect | 16 | 31 | 70 |
| Beckman Access DxI | 13 | 25 | 57 |
| DiaSorin Liaison | 12 | 24 | 54 |
| Siemens ADVIA Centaur | 15 | 31 | 69 |
| Siemens Immulite 2000 | 22 | 45 | 100 |

These target ranges have been devised using CKD stage 5 patients on haemodialysis.

PTH measured on a pre-dialysis sample in an EDTA tube, and will be reported in pmol/L. For the purposes of the SRR it is vital to record the location of the patient at the time of the audit.