We studied 64 patients with cystic fibrosis measuring HbA\(_1\) by ion exchange column chromatography and spectrophotometry (Biorad haemoglobin A\(_1\), by column test) expressed as a percentage of the total haemoglobin. Our laboratory reference range is 5.3–8.8% representing 2 SD limits of the mean in normal paediatric departments. Forty three patients with cystic fibrosis had a mean (SD) HbA\(_1\) concentration of 7.8 (0.9)% range 5.9–8.8. This was not statistically different from the mean HbA\(_1\) concentration of 7.4 (0.94)% of 21 normal children admitted for routine operations. All the patients with cystic fibrosis were on long term antibiotic prophylaxis mainly with \(\beta\) lactam antibiotics. HbA\(_1\) concentrations were obtained on each of the 43 patients with cystic fibrosis on one to four occasions. There was no statistical difference between the mean HbA\(_1\) concentration of 7.6 (0.9)% (n=43) of the patients treated with flucloxacillin for at least a two to three month period before estimation and the mean HbA\(_1\) concentration of 7.7 (0.8)% (n=24) for patients on both flucloxacillin and ampicillin. These did not differ from the HbA\(_1\) concentrations of the control population. We found evidence of impaired \(\beta\) cell function in patients with raised HbA\(_1\) concentrations by measurement of C peptide concentrations during oral glucose tolerance test.\(^2\)

Thus there was no evidence from our study that \(\beta\) lactam antibodies produce falsely raised HbA\(_1\) concentrations using the Biorad method. Although Flückiger reports a potential problem, the evidence that it should deter the measurement of HbA\(_1\) in patients with cystic fibrosis other than by specific techniques is lacking.

References

P R Stutchfield and D Isherwood
Institute of Child Health,
Alder Hey Children’s Hospital,
Eaton Road, Liverpool L12 2AP