Random blood glucose levels in an unselected cohort of acute medical admissions helps predict 2 year mortality

We have previously shown that random blood glucose (BG) levels taken in an unselected cohort of over 1500 acutely ill patients admitted during February 2010 to a single institution was strongly related to 30 day mortality, hospital length of stay and 30 day hospital readmission rates.

We followed up the same cohort to see if that index random BG level was related in any way to 1 year readmission rates and 1 and 2 year mortality rates.

Of the 942 patients who had their BG measured 198 were known to have diabetes. Overall, the lowest levels of mortality were those who had BG levels between 4.6 and 7.0 mmol/L

1 year readmission rates and 2 year mortality rates are shown in the table along with the admission BG

Admission blood glucose (mmol/L)	Total number	1 Year mortality rate	2 Year mortality rate	1 Year readmission rate
<4.5	57	25 (43.9%)	25 (43.9%)	370 (0.72)
4.6-6.4	431	119 (27.6%)	138 (32.0%)	
6.5-7.0	122	28 (23.0%)	40 (32.8%)	99 (1.01)
7.1-9.0	152	45 (29.6%)	55 (36.2%)	140 (0.92)
9.1-11.0	64	24 (37.5%)	26 (40.6%)	51 (0.8)
11.1-20	75	29 (38.7 %)	31 (41.3%)	63 (0.84)
>20	41	12 (29.3%)	13 (31.7%)	36 (0.88)

1 year readmission rates were highest in those with a previous diagnosis of diabetes. Our data shows that a single admission BG can help predict 2 year mortality in this unselected cohort of acutely ill patients. They were admitted under all medical specialities. Those patients with the highest BG levels were most frequently looked after by the endocrine team where their glucose was addressed swiftly and appropriately and may help to explain their lower mortality

Overall, people with diabetes had higher 1 and 2 year mortalities. However, the highest levels of mortality were seen in those with the lowest BG levels. This may reflect the severity of their underlying illness.