

A simple prick!- The prognostic value of a blood glucose measurement

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Outline



Importance of
Research



Method



Previous
Research



Results



Application



Conclusion

Importance of Research

- Blood glucose at the start of admission is a non-invasive procedure and can be done very quickly with minimal harm
- It is not done routinely in practice and can be of massive value as a prognostic marker as shown in previous studies
- Prognostic markers such as 5-year mortality is not just important to clinician but also the patient as it allows planning and preparation for patient care and intervention
- This research will allow us to highlight any associations between low or high blood glucose levels



Method

Data Collection

- In 2010, the medical records for each emergency medical admission through the Acute Medical Unit during February had their blood glucose level measured
- This was done by venous sample on admission

Analysis

- These admissions were reviewed to look at parameters such as readmissions, surgeries, death and cause of death
- The main parameter we focused on was 5-year mortality



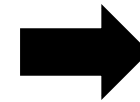
Previous Research

Assessing the relationship between admission glucose levels, subsequent length of hospital stay, readmission and mortality

NR Evans and KK Dhatariya

ABSTRACT – This study aimed to investigate relationships between dysglycaemia and length of hospital stay, short-term mortality and readmission in an unselected population in an acute medical unit (AMU). The rate of follow up in non-diabetic individuals with hyperglycaemia was also measured. We

acute medical unit (AMU) population. In addition, this study investigates the rate of follow up in individuals found to have hyperglycaemia on admission who did not have an existing diagnosis of diabetes. Other centres have highlighted the poor rate of follow up in such individuals.⁶



Conclusion: Further evidence for dysglycaemia as an independent variable that affects the length of hospital stay and demonstrates that it can be used as a prognostic marker

ORIGINAL PAPER

THE INTERNATIONAL JOURNAL OF
CLINICAL PRACTICE

Admission blood glucose helps predict 1 year, but not 2 years, mortality in an unselected cohort of acute general medical admissions

F. Haddadin,¹ A. Clark,² N. Evans,¹ K. Dhatariya^{1,2}

SUMMARY

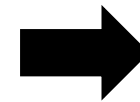
Aim: We previously showed that hyperglycaemia in newly hospitalised medical in-patients is associated with longer length of hospital stay, higher 28-day readmission rates and increased 28-day mortality. We aimed to assess whether a single blood glucose measurement taken at the time of admission could help to predict 1 and 2 year mortality. **Methods:** We retrospectively reviewed data from all

What's known

Hyperglycaemia is common in acutely unwell patients and is associated with poor short term outcomes. It has previously been shown that the measure of long-term glycaemic control, the glycated haemoglobin (HBA1c), is a predictor of mortality in acutely hospitalised

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Conclusion: Admission blood glucose can be used to help predict the risk of 1 year mortality in an unselected cohort of general medical admissions.



Population Demographics

<i>Admission Blood Glucose (mmol/L)</i>	<i>Mean ages (standard deviation)</i>
<6.5	69.6 (18.8)
6.5-7	72.7 (15.5)
7.1-9	76.5 (13.9)
9.1-11	74.9 (13.7)
11.1-20	68.4 (17.3)
>20	60.6 (2.26)

<i>Total Number of patients admitted in February (AMU)</i>	1502
<i>Established diagnosis of Type 1 and 2 Diabetes</i>	240 (16%)
<i>Admission blood glucose measured</i>	943

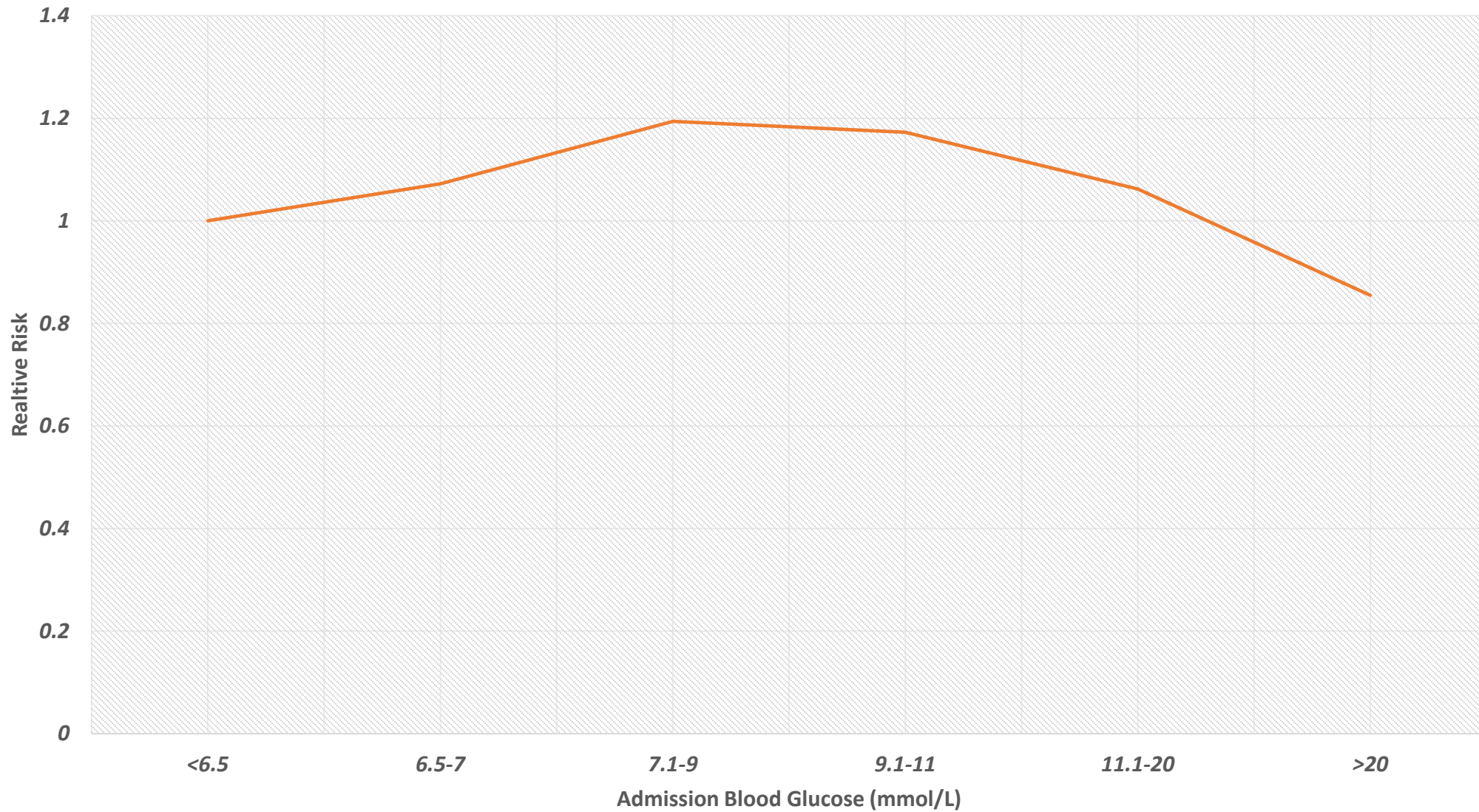


Results

Admission Blood Glucose (mmol/L)	Total number of admission with glucose concentrations	Number of patients alive at 5 years	Number of patients dead at 5 years	Relative Risk (95% CI)	p-value
<6.5	538	262	276	1 (CONTROL)	
6.5-7	100	45	55	1.07 (0.88 to 1.30)	0.49
7.1-9	163	63	100	1.20 (1.03 to 1.39)	0.02
9.1-11	68	27	41	1.17 (0.95 to 1.45)	0.13
11.1-20	77	35	42	1.06 (0.85 to 1.32)	0.58
>20	41	23	18	0.86 (0.60 to 1.22)	0.39



Admission Blood Glucose and 5-year mortality



Application & Conclusion

Our results have shown an increased risk of mortality within 5 years associated with a larger admission blood glucose level

It has also highlighted that individuals with admission blood glucose levels of 11.1 mmol/L and greater → had a reduced risk of death within 5 years

In clinical settings, I believe this has shown how effective a simple blood glucose could be but also highlighted we need to focus on patients with admission glucose levels of <11.1 mmol/L.



References

1. Diabetes and checking your blood sugars [Internet]. Diabetes UK. 2018 [cited 12 December 2018]. Available from: <https://www.diabetes.org.uk/guide-to-diabetes/managing-your-diabetes/testing>
2. Haddadin F, Clark A, Evans N, Dhatariya K. Admission blood glucose helps predict 1 year, but not 2 years, mortality in an unselected cohort of acute general medical admissions. *International Journal of Clinical Practice*. 2014;69(6):643-648.
3. Evans N, Dhatariya K. Assessing the relationship between admission glucose levels, subsequent length of hospital stay, readmission and mortality. *Clinical Medicine*. 2012;12(2):137-139.