Risk factors for mortality in diabetic patients discharged from hospital

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Risk factors for specific diabetes subpopulations		Risk factors in general diabetes populations	
Risk factor	**Number of studies & Ref**	**Risk Factor**	**No.& Ref**
Demographic			
Age	7[12,13,17,20,21,24,27,28]	Age	2[16,29]
Gender	1[12,46]	Gender	2[16,29]
Race	1[12]		
Socioeconomic status			
Employment status	1[13]		
Lifestyle			
Leisure time activity	1[13]		
External factors			
		Weather conditions	1[41]
Patient medical factors			
Co-morbidity	6[12,13,17,25,27,42]	Co-morbidity	2[16,29,40]
Malnutrition	1[21]		
Duration of diabetes	1[20]		
Severity score	4[12,17,27,28]		
DKA Severity	1[47]		
Body mass index	3[13,17,23]		
Gait speed	1[15]		
Calf circumference	1[15]		
Angina frequency	1[13]		
Inpatient stay factors			
Procedure	2[13,21,46]		
Admission diagnosis	1[21]		
Length of stay	1[24]		
Glasgow coma score (GCS)	1[28]		
Mechanical ventilation	1[28]		
Number of organs supported	1[28]		
No. of hospitalisations	1[20]		
Which hospital admitted to	1[12]		
Medication related			
Beta blocker	1[17]	Pharmacy follow up	1[44]
ACEi/ARB blocker	1[17]		
Statins prior to AMI	1[19]		
No. of medications at discharge	1[19]		
Insulin use	1[25,45]		
Clopidogrel	1[27]		
Laboratory results			
Admission creatinine	2[13,28]	Hba1c	1[38]
Fasting glucose	1[13]		
Sodium level	1[17]		
pH below 7.35	1[21]		
eGFR	1[22]		
Albuminura	1[22]		
Bilirubin	1[28]		
PCO2 (on blood gas)	1[28]		
Admission haemoglobin	1[13]		
Anaemia	1[27]		
Fibrinolysis	1[39]		
Glycaemic Status (not including Hba1c above)			
		Glycaemic variability	1[34]
		Mean capillary blood glucose	1[38]
		Insulin resistance	1[38]

Table of all identified risk factors. Credit: Institute of Digital Healthcare at WMG, University of Warwick

When patients are discharged from Hospital those with diabetes are at an increased risk of readmission and mortality, there are guidelines for discharging patients with diabetes to reduce these risks, however researchers from the Institute of Digital Healthcare at WMG, University of Warwick and Warwick Medical School have identified known risk factors for mortality in adult patients discharged from hospital with diabetes.

In the paper,'A Systematic Review Considering Risk factors for Mortality of Patients Discharged from Hospital with a Diagnosis of Diabetes', published in the Journal of Diabetes and its Complications, researchers identified 35 studies that considered the risk factors relating to mortality for patients discharged from hospital with diabetes, they analysed these studies and identified 48 significant risk factors for mortality.

The 48 risk factors are grouped into the following nine categories:

- Demographic
- Socioeconomic
- Lifestyle
- Patient medical factors
- Inpatient stay factors
- Medication related
- Laboratory results
- Glycaemic status

Professor Theo Arvanitis, from the Institute of Digital Healthcare at WMG, University of Warwick comments:

"The most common risk factor is in the demographic category of age and the second most important factor is comorbidity burden; this comes under the patient medical factors category, and means patients have more than one condition. We also identified BMI as a significant risk within the patient medical factors category, with those who were at the heavier end of the scales to be more at risk.

"Thirty-Seven of the risk factors we identified from one research paper. This tell us that this research in general is still very early, and more studies are needed to identify the importance and possibly any other risk factors. This could decrease the mortality rate of diabetics discharged from hospitals in the future."

More information: Teesta Mukherjee et al. A systematic review considering risk factors for mortality of patients discharged from hospital with a diagnosis of diabetes, *Journal of Diabetes and its Complications* (2020). DOI: 10.1016/j.jdiacomp.2020.107705

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