



AWARENESS ON DIABETES AND DIABETIC KETOACIDOSIS

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ABSTRACT

Background: Diabetic ketoacidosis (DKA) is a serious and potentially life-threatening complication of diabetes mellitus. It primarily affects individuals with type 1 diabetes but can also occur in type 2 diabetes under certain conditions. DKA is characterized by three main features: hyperglycemia (high blood sugar), ketosis (excess ketones in the blood), and metabolic acidosis (acid buildup in the body). It is often triggered by infections, missed insulin doses, or undiagnosed diabetes. Without prompt treatment, DKA can lead to complications such as cerebral edema and even death. This article provides an in-depth review of the epidemiology, pathophysiology, clinical features, and recent advancements in the management of DKA. **Methodology:** A cross sectional study was conducted among 140 Medical students (undergraduates, interns, postgraduates) in Konaseema Institute of Medical sciences and research foundation, Amalapuram. The study data was collected through Google forms using a pre-designed semi-structured questionnaire. **Results:** In this study, majority of the medical students has awareness about diabetes and diabetic ketoacidosis i.e 132(94.3%). Both males and females has equal awareness i.e 70(50%) each. Interns has more awareness i.e 69(49.3%) among 140 responders compared to that of undergraduates and postgraduates. **Conclusion:** Diabetic ketoacidosis remains a significant challenge in clinical practice and research. While advances in management have led to better patient outcomes the rising incidence of DKA underscores the need for improved prevention early detection and personalized treatment strategies. Further studies should aim to enhance or understanding of the genetics and environmental factors contributing to DKA and develop more cost efficient and effective treatment protocols.

KEYWORDS : Diabetes, Diabetic ketoacidosis, role of insulin, awareness about DKA.

INTRODUCTION

Diabetic ketoacidosis (DKA) is a serious and potentially life-threatening complication of diabetes mellitus. It primarily affects individuals with type 1 diabetes but can also occur in type 2 diabetes under certain conditions. DKA is characterized by three main features: hyperglycemia (high blood sugar), ketosis (excess ketones in the blood), and metabolic acidosis (acid buildup in the body). It is often triggered by infections, missed insulin doses, or undiagnosed diabetes. Without prompt treatment, DKA can lead to complications such as cerebral edema and even death. This article provides an in-depth review of the epidemiology, pathophysiology, clinical features, and recent advancements in the management of DKA.

Methodology

Study Design: Cross-sectional study

Study Population: All medical students (undergraduates, interns, postgraduates)

Study Period: November 2024 - March 2025

Sample Techniques: Convenient sampling

Inclusion Criteria : All medical students (undergraduates, interns, postgraduates)

Exclusion Criteria: Consultants in medicine and non medical students.

Ethical Consideration: Informed consent was taken

Data Collection : Data collection was done using pre tested and pre structured questionnaire. Google forms were sent to all students and asked to be filled.

Data Analysis And Interpretation: Data was entered using Microsoft Excel 2016 spreadsheet. Summarization and analysis of data were carried out by using IBM SPSS Software version 20(licensed). Descriptive Statistics: Frequency, percentage. Inferential Statistics: Chi-square test.

RESULTS

The questionnaire was administered to all medical students (undergraduates, interns, postgraduates). Questionnaire consists of 15 questions covering all possible fields to obtain the maximum benefit from the study

Table 1: A total of 140 subjects were taken as sample size out of which males constituted 70(50%) and females 70(50%).

	Frequency	Percent
1 (male)	70	50.0
2 (female)	70	50.0
Total	140	100.0

Table 2: out of total medical students UG constitute 39(27.9%), interns were 69(49.3%) and PG 32(22.9%).

year of study	Frequency	Percent
1 (UG)	39	27.9
2 (Intern)	69	49.3
3 (PG)	32	22.9
Total	140	100.0

Table 3: out of total medical students 132(94.3%) were aware about diabetes whereas 8(5.7%) were not.

awareness about diabetes	Frequency	Percent
1 (yes)	132	94.3
2 (no)	8	5.7
Total	140	100.0

Table 4: out of total medical students taken 55(39.3%) were Diabetic whereas 85(60.7%) were not.

Are u a diabetic	Frequency	Percent
1 (no)	85	60.7
2 (yes)	55	39.3
Total	140	100.0

Table 5: out of total medical students taken 117(83.6%) has family history of diabetes whereas 23(16.4%) don't.

family history of diabetes	Frequency	Percent
1(yes)	117	83.6
2 (no)	23	16.4
Total	140	100.0

Table 6: out of total medical students taken 127(90.7%) were aware that diabetes is related to endocrine pancreas whereas 13(9.3%) don't know.

diabetes is related to endocrine pancreas	Frequency	Percent
1 (yes)	127	90.7
2 (no)	13	9.3
Total	140	100.0

Table 7: out of total medical students taken 133(95.0%) know the meaning of FBS and PPBS whereas 7(5.0%) don't know.

meaning of FBS and PPBS	Frequency	Percent
1(yes)	133	95.0
2 (no)	7	5.0
Total	140	100.0

Table 8: out of total medical students taken 131(93.6%) know that DKA is an acute complication of diabetes whereas 9(6.4%) don't know.

DKA, an acute complication of diabetes	Frequency	Percent
1 (true)	131	93.6
2(false)	9	6.4
Total	140	100.0

Table 9:out of total medical students taken 130(92.9%) know that DKA is seen in both type 1 and type 2 diabetes.

DKA seen in both type-1and type-2 diabetes	Frequency	Percent
1(true)	130	92.9
2(false)	10	7.1
Total	140	100.0

Table 10:out of total medical students taken 126(90.0%)know that Short acting insulin is used in management of DKA whereas 10(10.0%) don't know.

short acting insulin is used in management of DKA	Frequency	Percent
1(true)	126	90.0
2(false)	10	10.0
Total	140	100.0

Table 11: Out of total medical students taken 131(93.6%) know that electrolyte imbalance is seen in DKA whereas 9(6.4%) don't know.

electrolyte imbalance is seen in DKA	Frequency	Percent
1(true)	131	93.6
2(false)	9	6.4
Total	140	100.0

Table 12: out of total medical students taken 130(92.9%) know that increased blood glucose is a component of DKA whereas 10(7.1%) don't know.

increased blood glucose is a component of DKA	Frequency	Percent
1(true)	130	92.9
2 (false)	10	7.1
Total	140	100.0

Table 13: out of total medical students taken 130(92.9%) know that type- 1diabetic people is at highest risk of developing DKA whereas 10(7.1%)people don't know.

type-1 diabetic people is at highest risk of developing DKA	Frequency	Percent
1(true)	130	92.9
2(false)	10	7.1
Total	140	100.0

Table 14: Out of total medical students taken 131(92.9%) know that diet plays role in managing diabetes whereas 9(7.1%) don't know.

diet plays role in managing diabetes	Frequency	Percent
1(true)	131	92.9
2(false)	9	7.1
Total	140	100.0

Showing association between awareness of diabetes and DKA is an acute complication of diabetes

DIABETIC KETOACIDOSIS (DKA) is an acute complication of DIABETES MELLITUS (DM)			
		1- true	2- false
		1	2
		Count	Count
Do you have awareness about diabetes	1	127	5
1- yes	2	4	4
2- no			

Pearson Chi-Square Tests		
		DIABETIC KETOACIDOSIS (DKA) is an acute complication of DIABETES MELLITUS (DM) 1- true 2- false
Do you have awareness about diabetes	Chi-square	26.779
1- yes	df	1
2- no	Sig.	.000 ^{a,b}

The chi square value is significant at 0.05 level.

Showing association between Short acting insulin is used in management of DKA and increased blood glucose is a component of DKA

		Increased blood glucose is a component of DKA 1- true 2- false	
		1	2
		Count	Count
Short acting insulin is used in management of DKA	1	122	4
1- true	2	8	6
2- false			
Pearson Chi-Square Tests			
		Increased blood glucose is a component of DKA 1- true 2- false	
Short acting insulin is used in management of DKA	Chi-square	29.915	
1- true	df	1	
2- false	Sig.	.000 ^{a,b}	

The chi square value is significant at 0.05 level

Showing association between diabetes is related to endocrine pancreas and electrolyte imbalance is seen in DKA

		Electrolytes imbalance is seen in DKA 1- true 2- false	
		1	2
		Count	Count
Diabetes is related to endocrine pancreas	1	123	4
1- yes	2	8	5
2- no			
Pearson Chi-Square Tests			
		Electrolytes imbalance is seen in DKA 1- true 2- false	
Diabetes is related to endocrine pancreas	Chi-square	24.446	
1- yes	df	1	
2- no	Sig.	.000 ^{a,b}	

The chi square value is significant at 0.05 level

Showing association between DKA is seen in both type 1 and type 2 diabetes and type 1 diabetic people is at highest risk of developing DKA

		Type- 1 diabetic people is at the highest risk of developing DKA 1- true 2- false	
		1	2
		Count	Count
DKA is seen in both type - 1	1	124	6
DM and type - 2 DM	2	6	4
1- true			
2- false			

		Type- 1 diabetic people is at the highest risk of developing DKA 1- true 2- false
DKA is seen in both type - 1 DM and type - 2 DM	Chi-square	17.529
1- true	df	1
2- false	Sig.	.000 ^{a,b}

The chi square value is significant at 0.05 level
Showing association between increased blood glucose is a component of DKA and diet plays role in managing diabetes

		Does diet play in managing diabetes 1- yes 2- no	
		1	2
		Count	Count
Increased blood glucose is a component of DKA	1	126	4
1- true	2	5	5
2- false			
Pearson Chi-Square Tests			
		Does diet play in managing diabetes 1- yes 2- no	
Increased blood glucose is a component of DKA	Chi-square	33.988	
1- true	df	1	
2- false	Sig.	.000 ^{a,b}	

The chi square value is significant at 0.05 level

DISCUSSION

In present study, table 3 showing majority of medical students are aware of diabetes i.e 132(94.3%).out of 140 responders 55(39.3%) are diabetic.

Study conducted by Harmanjit Singh et al showed out of the total responders 37% has family history of diabetes. In my current study also showed the similar results i.e. out of 140 responders 117(83.6%) has family history of diabetes.

Study conducted by Rayan Ibrahim Bin Elaiwah et al showed out of the 150 participants 45(30%) of the participants has awareness about diabetes. In my current study also showed the similar results i.e. out of 140 participants 132(94%) participants has awareness about diabetes.

Study conducted by Elhassan Hussein Eltom et al showed out of the 339 participants 211(62.5%) has felt knowledgeable about Short acting insulin is used in management of DKA. In my current study also showed the similar results i.e out of 140 responders 126(90.0%) have knowledge that Short acting insulin is used in management of DKA.

Study conducted by Bara'a Ahmad faran showed that 22(55%) of responders who had relatives with diabetes also had a poor level of awareness regarding management. Whereas in contrast my study showed 126(90%) know that Short acting insulin is used in management of DKA and 131(92.9%) know that diet plays role in managing diabetes.

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