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ORIGINAL ARTICLE

Assessment of Nurses' Practices Towards Children with Diabetic ketoacidosis

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ABSTRACT:

Objective: To assess of nurses' Practices towards children with diabetic ketoacidosis.
Methods: A descriptive study design was used to achieved the objectives of the study. The study was conducted in four government hospitals includes: Ibn AI-Atheer Teaching Hospital, Al-Khansaa Teaching Hospital, Mosul General Hospital and AL-Salam Teaching Hospital. The non-probability (purposive) sampling method was selected for the study comprised of (30) Nurses from the pediatric departments (ward, intensive care units) of Mosul hospitals**.** The data was analysis by descriptive statistics in SPSS version 24 by using frequency, percentage
Results: The study showed that the 53% (16) of the nurses were aged range from 25 to 29 year in the study, The demographic information showed that the majority of the staffs in the study group were male 57% (17). Most of the participants are married people 70% (21), most of the them had a bachelor's degree 67% (20). In related to general year of experience the study found that most of nurses 63% (16) have (1-5) years of experience and finally the study found that 43% (13) of nurses have 1 year work duration in pediatric department.
Conclusion: The researchers concluded that nurses' practices towards caring for patients with DKA were poor in all aspects, which increases the risk of disability and mortality among them.
Keywords: Assessment, Practices , Diabetic ketoacidosis

INTRODUCTION

Diabetic ketoacidosis one of the most dangerous side effects of diabetes is diabetic ketoacidosis (DKA). DKA happens when the body cannot use glucose as a source of energy due to low insulin levels, which causes the level of glucose to rise. As a result, the tissue begins to use ketone or fatty acids as a source of energy. Usually, DKA is associated with type 1 Diabetes Mellites (T1DM) more often than Types 2 Diabetes Mellites (T2DM); however, DKA can also be seen in the patients with T2DM[(1)]. The characteristic of DKA is blood glucose > 11 mmol/L, venous pH < 7.3, or bicarbonate < 15 mmol/L and ketonemia with ketonuria. Acute hyperglycemic emergencies like diabetic ketoacidosis carry a high risk of significant morbidity and mortality if they are not treated right away[(2)].Types1 diabetes mellites affects 79,100 children under the age of 15 annually around the world. When these young persons are given a diabetes diagnosis, up to 80% of them already have DKA. The prevalence of DKA at the initiation of diabetes varies greatly by region [(3)] .Due to the severity of their condition or because they may also have another major illness present, many DKA patients may need to be admitted to intensive care units (ICUs). However, due to hospital restrictions or a lack of infusion pumps in the general medical wards, patients are admitted to ICUs in some institutions even if they have mild to moderate DKA for the provision of intravenous insulin infusion[(4)].The Joint British Diabetes Societies for Inpatient (JBDS-IP) guidelines, which have been developed and are regularly reviewed, have made it easier and more straightforward to manage diabetic ketoacidosis (DKA). Like any rules, they are incredibly helpful but subject to varied interpretations [(5)]. Pediatric DKA is treated with careful attention to fluids, insulin, and electrolyte supplementation and monitoring. In the first 20 to 30 minutes after presentation, initial isotonic fluid resuscitation is now advised for all patients. This is followed by repletion of the volume deficit over 36 hours in conjunction with an insulin infusion, electrolyte supplementation, corrected acidosis, and careful monitoring and management of any potential cerebral edema [(6)].Nursing care for patients with DKA concentrates on monitoring fluid and electrolyte status, blood glucose levels, and other medications; administering fluids, insulin, and other medications; and preventing other complications like fluid overload. Nurses frequently lack the training necessary to provide patients with the best care possible [(7)]. DKA management requires knowledge and skills by the nursing staff to reduce the associated morbidity and mortality. Therefore, the study aimed to assess practice of nurses about management of DKA in children.

METHODOLOGY

A descriptive study design was used to achieved the objectives of the study. The study was conducted in four government hospitals includes: Ibn AI-Atheer Teaching Hospital, Al-Khansaa Teaching Hospital, Mosul General Hospital and AL-Salam Teaching Hospital. The non-probability (purposive) sampling method was selected for the study comprised of (30) Nurses from the pediatric departments (ward, intensive care units) of Mosul hospitals. The data was collected by developed observational checklist, the researchers constructed based on previous study. The checklist consists of four parts: First section (4 items) contains nursing practice during admission to pediatric departments, the second section (4 items) contain nursing intervention during fluid administration, the third section (4 items) nursing intervention during insulin administration the nursing staff practices after intervention with children regarding bundle care guidelines and the fourth section (4 items) contain nursing intervention during electrolyte replacement. The data was collected by direct observation at three times in intensive care and pediatric wards. The scoring of nursing practice divided in to three level, level one (score 0 or never) when nurse not apply the procedure for three times of observation, score (1 or inadequate) when nurse apply the procedure only one times at three observations, finally, (2or 3 score) equal adequate when nurse apply the procedure two or three times during the observation. The data was analysis by descriptive statistics in SPSS version 24 by using frequency, percentage.

RESULTS

Table 1: Distribution of the study sample according to their demographic variables.

Variable	Items	F	%
Age	20-24	4	13%
	25-29	16	53%
	30-34	6	20%
	35-39	2	7%
	39≤	2	7%
Gender	Male	17	57%
	Female	13	43%
Marital status	Single	9	30%
	Married	21	70%
Educational level	Secondary degree	4	13%
	Diploma degree	6	20%
	Bachler degree	20	67%
General Experience	1-5 years	19	63%
	6-10 years	7	23%
	>10 years	4	14%
Duration	1 year	13	43%
	2 years	10	33%

	3 years	5	17%
	4 years	2	7%
Total		30	100%

Table 2: Nurses' Practices Towards Children with Diabetic ketoacidosis

Procedure	Never		Inadequate		Adequate	
Nurse's Responses of immediate intervention	No.	%	No.	%	No.	%
Vital signs	6	20.0	13	43.3	11	36.7
blood sugar level measurement	10	33.3	17	56.7	3	10.0
Explain to patient about the time treatment	0	0.0	17	56.7	13	43.3
Nursing documentation for 1 and 2	21	70.0	9	30.0	0	0.0
Nurse's Responses of fluid	No.	%	No.	%	No.	%
Adjust fluid as prescribed (manually, infusion pump)	4	13.3	15	50.0	11	36.7
Monitor intake.	25	83.3	5	16.7	0	0%
Monitor output.	16	53.3	12	40.0	2	6.7
Nursing documentation	11	36.7	15	50.0	4	13.3
Nurse's Responses of insulin	No.	%	No.	%	No.	%
Start IV insulin by syringe pump.	15	50.0	15	50.0	0	0.0
Monitor glucose level hourly	15	50.0	12	40.0	3	10.0
Monitor sign and symptoms of cerebral edema	24	80.0	5	16.7	1	3.3
nursing documentation	8	26.7	5	16.7	1	3.3
Nurse's Responses of electrolyte	No.	%	No.	%	No.	%
Reporting to medical staff any change in electrolyte disturbance	4	13.3	25	83.3	1	3.3
Observe passes of urine before	21	70.0	8	26.7	1	3.3
Ensure fluid that administrated contain potassium	11	36.7	15	50	4	13.3
Nursing documentation	12	40.0	15	50.0	3	10.0

DISCUSSION

The systematic review focused upon evidence-based practice in terms of medical management and outcomes, thereby suggesting that there was a vast scope for future randomized control trials on all aspects of DKA management [8].The study showed that the 53% (16) of the nurses were aged range from 25 to 29 year in the study, The demographic information showed that the majority of the staffs in the study group were male 57% (17). Most of the participants are married people 70% (21), most of the them had a bachelor's degree 67% (20). In related to general year of experience the study found that most of nurses 63% (16) have (1-5) years of experience and finally the study found that 43% (13) of nurses have 1 year work duration in pediatric department. In a previous study, the demographics indicated that although the sample size was small, there was a wide A group of qualified and experienced nurses who participated in the study. every nurse reported seeing patients with DKA in their clinical practice, but only 17.6% (n = 3) They said they had attended an education about DKA in the previous 12 months. So, this, The sample is likely to be able to provide a snapshot of knowledge and decision making Operations RNs who manage patients with DKA [9-11].The results showed that the majority of nurses' practices towards caring for children with diabetic ketoacidosis were never 0 or 1, inadequate for all aspects. This indicates poor and inadequate nurse practices towards, nurse responses to immediate intervention, nurse responses to fluids, nurse responses to insulin, and nurse responses to electrolytes. this results agreement with previous study conducted by [12,13] study entitled “knowledge, attitude and practice related to diabetes among community members in four provinces” who reported poor practice of nurses towards diabetes.

CONCLUSION

The researchers concluded that nurses' practices towards caring for patients with DKA were poor in all aspects, which increases the risk of disability and mortality among them. The researchers recommend that intensive training programs should be developed for nurses working in intensive care units and emergency units to enhance the knowledge and practices of nurses towards caring for patients with DKA.

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