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SECTION 20. Medicine.

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LOW ARTERIAL BLOOD PH AND INCREASED MORTALITY AMONG PATIENTS IN ICU

Abstract: Objective: This study was conducted to determine relation of low blood ph and increased mortality among patients admitted in ICU.

Design and Duration: This is an observational type of study started in January 2018 and completed in August 2018 comprising on seven months duration.

Setting: This study was conducted in a tertiary care hospital Jinnah Hospital Lahore.

Patients and Methods: All patients admitted in ICU care either surgery or medicine, were included in this study. All male and female cases were included. Consent was taken from the close relatives of the patients for including data of patient in this study. A written consent was taken from medical superintendent of the hospital for conducting study. Privacy of data was maintained.

Results: There were 50 cases included in this study. There were both male and female cases. There were 35(70%) male cases and 15(30%) female cases. Age range of patients was 15-60 years with mean age of 44±20 years. There were 7(14%) cases between 15-25 years age, 9(18%) cases were between 26-35 years, 8(16%) cases between 36-45 years, 12(24%) cases between 46-55 years and 14(28%) cases above 55 years of age. Out of 50 cases 31(62%) died and 29(38%). There were 25(50%) cases out of 31 cases in which blood ph was below 7 in their disease course at least one time.

Conclusion: Low blood Ph was is associated with poor prognosis of disease and increased mortality rate among patients admitted in intensive care unit.

Key words: Blood ph, ICU, disease prognosis, critical ill patients.

Language: English

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Introduction

Patients admitted in intensive care unit have variable blood ph due to underlying disease process. Blood ph is a very important factor in determining morbidity and mortality in patients.¹ It was seen in this study that most of the cases died in intensive

care unit were having low blood ph during illness period. It was seen that most of the cases in this study were male.² Disease process determines ph of the blood in patients, severely ill. When patients have normal range of body ph their body functions work normally and when body ph is abnormal it disturbs

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body functions.³⁻⁵ When derangement in blood ph is slight compensatory mechanisms normalize it but when it is severely deranged then proper treatment is required for it. It is very important to maintain blood ph of the patients within normal range. An inclusion and exclusion criteria were established for cases included in this study. It was seen that most of the cases in this study were male.⁶ Disease process determines ph of the blood in patients, severely ill. When patients have normal range of body ph their body functions work normally and when body ph is abnormal it disturbs body functions.⁷ When derangement in blood ph is slight compensatory mechanisms normalize it but when it is severely deranged then proper treatment is required for it.

Patients and Methods

This is a cross sectional study conducted in a tertiary care hospital of Pakistan. An inclusion and exclusion criteria was formulated according to which all those cases were included in this study which got admitted in intensive care unit during study period, patients admitted in medical and surgical ICU both and which cases among them gave consent. All patients admitted in ICU care either surgery or

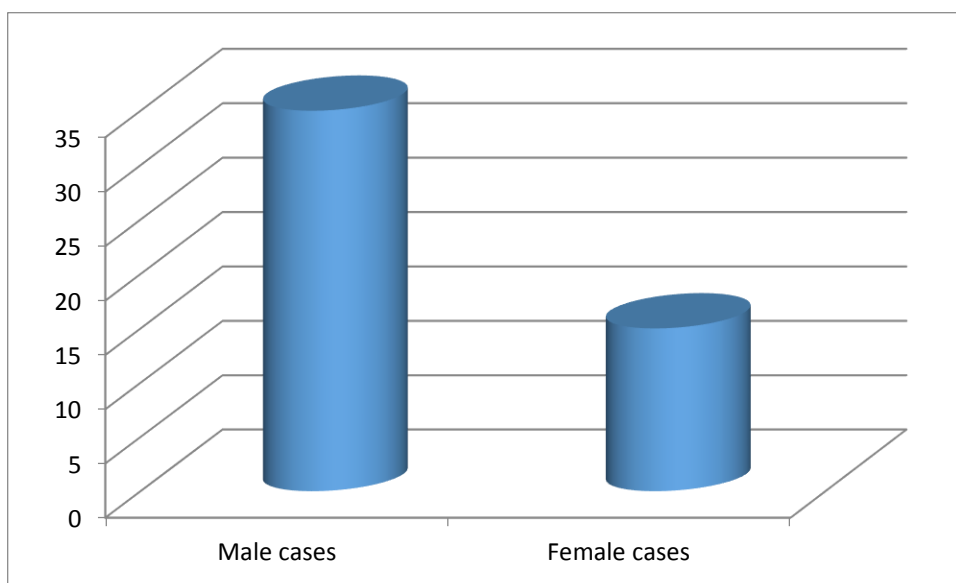
medicine, were included in this study. All male and female cases were included. Consent was taken from the close relatives of the patients for including data of patient in this study. A written consent was taken from medical superintendant of the hospital for conducting study. Privacy of data was maintained. All data related to this study about patients was documented properly and was analyzed using statistical software.

Results

There were 50 cases included in this study. There were both male and female cases. There were 35(70%) male cases and 15(30%) female cases. Age range of patients was 15-60 years with mean age of 44±20 years. There were 7(14%) cases between 15-25 years age, 9(18%) cases were between 26-35 years, 8(16%) cases between 36-45 years, 12(24%) cases between 46-55 years and 14(28%) cases above 55 years of age. Out of 50 cases 31(62%) died and 29(38%). There were 25(50%) cases out of 31 cases in which blood ph was below 7 in their disease course at least one time. In these cases 45% were diabetic and 55% were non-diabetic. While 30 were cases of poisoning either suicidal or homicidal.

Table 1.

Age of patients (years)	Number of patients (n)	%
15-25	7	14
26-35	9	18
36-45	8	16
46-55	12	24
Above 55	14	28
Total	50	



Picture 1.

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Discussion

All cases in this study were admitted in intensive care unit either due to heart disease, poisoning or chronic liver disease or renal failure etc.⁸ Patients admitted in intensive care unit have variable blood ph due to underlying disease process. Blood ph is a very important factor in determining morbidity and mortality in patients. It was seen in this study that most of the cases died in intensive care unit were having low blood ph during illness period.⁹ It was seen that most of the cases in this study were male. Disease process determines ph of the blood in patients, severely ill. When patients have normal range of body ph their body functions work normally and when body ph is abnormal it disturbs body functions. When derangement in blood ph is slight compensatory mechanisms normalize it but when it is severely deranged then proper treatment is required for it.¹⁰ It is very important to maintain blood ph of the patients within normal range. An inclusion and exclusion criteria were established for cases included in this study.¹¹⁻¹³ This is a cross sectional study conducted in a tertiary care hospital

of Pakistan. An inclusion and exclusion criteria was formulated according to which all those cases were included in this study which got admitted in intensive care unit during study period, patients admitted in medical and surgical ICU both and which cases among them gave consent. Disease process determines ph of the blood in patients, severely ill.¹⁴ When patients have normal range of body ph their body functions work normally and when body ph is abnormal it disturbs body functions. When derangement in blood ph is slight compensatory mechanisms normalize it but when it is severely deranged then proper treatment is required for it.¹⁵ Early detection of abnormal blood ph and prompt treatment can reduce mortality rate to much extent.

Conclusion

Blood ph below normal range is indicator of poor prognosis of disease and increases mortality and morbidity in patients admitted in intensive care unit. Early detection of abnormal ph and proper treatment can reduce mortality.

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