Original article:

Clinical profile of febrile illness in patients admitted in INTENSIVE CARE UNIT in a tertiary care hospital of Maharashtra

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ABSTRACT:

INTRODUCTION: Fever has traditionally been recognized as a cardinal sign of illness and has negative effect on patients well-being.Fever many a times is treated as 'the origin of illness rather than the response to, an illness .

MATERIALS AND METHODS: It is a prospective cross-sectional clinical study consisting of 100 patients which was undertaken to investigate the different etiology, clinical presentation, lab investigationof Patient who developed fever after admitted in ICU of a tertiary care hospital and their complications like shock, thrombocytopenia and ARDS in terms of morbidity and mortality were studied during period of march 2015 to February 2016

RESULTS : In our study we found that around 36% patients were expired following development of fever and around 64% patients were discharged from ICU with treatment.

CONCLUSION: Urinary Tract Infection is the most common disease responsible for fever in ICU patients. Rapid, effective and cheap diagnostic test should be developed to find causes of undifferentiated febrile illness and to prevent misuse of antibiotics.Febrile illness in ICU patients not only leads to significant level of morbidity among the population, but they are important cause of mortality.Complications like shock, renal failure, thrombocytopenia, ARDS are important predictors of mortality.

INTRODUCTION

Fever has traditionally been recognized as a cardinal sign of illness and has negative effect on patients well-being.[1]Fever many a times is treated as 'the origin of illness rather than the response to, an illness[2]. Fever is one of the major problems occur in the Intensive Care Unit (ICU). Intensive Care Unit patient have several underlying medical conditions. The high temperature can lead to serious physiological changes in the body that can lead to increased morbidity and mortality including increased energy expenditure, cardiacoutput,oxygenconsumption, carbon-dioxide production and in already ill patient.

In ICU patients fever may be caused by infectious or non-infectious causes. And most febrile illnesses have common type of clinical manifestations simulating one another. This may make the accurate diagnosis of the cause of the fever difficult to diagnose but not impossible. However, if thorough history and meticulous physical examination is done, it is possible to clinically differentiate the etiology of fever. In our study we are trying to determine the major causes of fever and their presentation in our Intensive Care Unit setup.

MATERIALS AND METHODS

It is a prospective cross-sectional clinical study consisting of 100 patients which was undertaken to

investigate the different etiology, clinical presentation, lab investigation of Patient who developed fever after admitted in ICU of a tertiary care hospital and their complications like shock, thrombocytopenia and ARDS in terms of morbidity and mortality were studied during period of march 2015 to February 2016. Every 10th patient of febrile illness admitted in ICU were selected for the study. Information like name, age, sex, detailed history, clinical presentation, lab investigation were taken on predesigned questionnaire. The patients were observed for fever pattern after the admission, until they stay in the hospital or till they are discharged or expired. Patient who developed fever after admission to ICU and having Age > 19 yrs of either sex were included while Patients with Retro viral disease, malignancy , Patients age < / = 19 year or > 80 yrs and pregnant women were excluded from the study.Data was entered in excel 2011 and analyzed by SPSS Ver. 20.

RESULTS

A total of 100 patients who developed fever after admission in ICU were studied. In this study it has been found that among 100 patients who had fever after admission in the ICU, 62% were males and 38% were females

The following observations were made in present study.

Table - 1 :Age Distribution In Febrile Patient admitted In ICU.

Sr. No.	Age in year	No. of Cases	Percentage%
1.	20-30	32	32%
2.	31-40	20	20%
3.	41-50	8	8%
4.	51-60	20	20%
5.	61-70	18	18%
6.	71-80	2	2%
	Total	**100**	**100%**

Among 100 cases, maximum incidence (32%) was found in third decade. The youngest patient was 20 years old, while oldest was 75 years old.

Table - 3 : Distribution of patients according to Presenting Symptoms.

Symptoms	Male	Female	Total	Percentage%
Headache	24	6	30	30
Nausea	48	22	70	70
Vomitting	28	16	44	44
Cough	8	16	24	24
Burning micturition	22	22	44	44
Abdominal pain	20	18	38	38
Breathlessness	36	22	58	58
Altered sensorium	20	4	24	24
Increased stool frequency	0	2	2	2
Oligourea	0	2	2	2

Above table shows that in our study Nausea (70%) was most common presentation in febrile patient in ICU followed by Vomitting (44%) and Burning micturition (44%),

While Oligourea (2%) and increased frequency of stool (2%) is least common presentation.

LAB INVESTIGATIONS

Table – 5:Distribution of patients according to lab reports in Febrile ICU patients.

Lab investigation	Male (mean) gm	Female (mean) gm	Total (mean)
Hb%	10.2	9.9	10.05
Total count	11651	11631	11641
Platlet	1.75 lac	1.6 lac	1.67 lac
PSMP	Nil	Nil	Nil
Bld.urea	45	37	41
Sr. creat	2	1.65	1.82
Sr. bilirubin	2.5	2.6	2.5
SGPT	100	119	109

Above tables shows that   average Hb is 10.2 gms for male while 9.9 gms for females. Average total count was 11651 cells/cub. mm for males n 11631 cell/cub.mm for females. Avarageplatelates count was 1.67 lakhs. Average Bld. Urea and Sr.creat were 41mg/dl and 1.82mg/dl respectively. Average value for Ser.bilirubin and SGPT were 2.5 mg and 109 IU respectively.

262

Table-6: Distribution of patients according to Various Causes of Pyrexia In ICU Patient.

Diagnosis	Male	Female	Total	%	No.of mortality cases	% of mortality
UTI	36	14	50	50	22	44
VAP	20	14	34	34	10	27
CRBI	4	6	10	10	6	16
DF	0	6	6	6	0	0

Above table shows out 100 patients, 50 patients (36 male + 14 female) had Urinary Tract Infection. So most common cause of fever in our ICU is UTI (50%), followed by Ventilator associated pneumonia (34%) 34 patient, then Cathetor related blood infection or sepsis (10%) 10 patients and followed by Drug fever (6%) only in 6 patients. Most common cause for mortality among various causes is UTI (44%), while Drug fever is least common cause (0) among expired patients.

Table-7 :Distribution of patients according to Complications Among Febrile Patients In ICU.

Complications	Male	Female	Total	%	No.of mortality cases	% mortality
Shock	20	4	24	24	18	50
Hypoglycemia	10	0	10	10	2	5
Thrombocytopenia	10	8	18	18	12	33
ARF	10	4	14	14	4	11
ARDS	8	16	24	24	10	27
Others	6	2	8	8	2	5

Above table shows most common complications in febrile patients in ICU are SHOCK (24%) and ARDS (24%) 24 patients for each, followed by Thrombocytopenia (18%) 18 patients, then ARF (14%) in 14 patients, Hypoglycemia (10%) 10 patients, followed by others (8%).

While most cause of morbidity among complicated febrile patients was also Shock (50%) 18 patients, followed by thrombocytopenia (33%) 12 patients, followed by ARDS (27%) and Hypoglycemia (5%) 2 patient is least common cause for mortality.

In our study we found that around 36% patients were expired following development of fever and around 64% patients were discharged from ICU with treatment.

DISCUSSION

In our study most of febrile patients belongs to third decade (32%), fourth decade (20%) and sixth decade (20%) and least affected age group is eighth decade (2%). While the study results of GiViTI et al and Govada et al group also shows second decade is prominently affected as 28% and 26 % respectively

263

while seventh decade least affected by febrile illness in ICU.

while we observed that most common presentation of febrile patients were Nausea (70%), Breathlessness (58%), vomiting (44%), Burning micturition (44%) and oligourea is lest common. Results of comparable study done by Govada group shows Vomitting (68%) most common presentation, followed by Nausea (60%), Breathlessness (51%) and least common is Oligourea (5%).

So overall Nausea and Vomiting are most common presentation In our study we found that UTI (50%) is most common etiology of febrile illness, followed by VAP (34%) and least common is Drug fever. Similar study done by Aleem et al group shows VAP (44%) is most common etiology, followed by UTI (26%) and CRBI (15%) while least common is Drug fever and other non infectious causes.

In our study we found that, Mortality is highest in patient having UTI, among different causes of fever followed by VAP(27%), CRBI(16%) while least among patients having Drug fever. But Study done by Aleem et al group shows that mortality highest among patients having VAP(45%),followed by UTI(23%),CRBI(20%), while least among patients having Drug fever(2%).

In our study we found that most common complication is SHOCK(24%) and ARDS(24%) for each , followed by Thrombocytopenia(18%) , then ARF(14%), Hypoglycemia (10%) 5 patients, followed by others (8%). In Study by Aleem et al most common complication is ARDS (36%), followed by Thrombocytopenia (25%), Shock(20%) and least common is Hypoglycemia.

Also in our study we found that most common cause of mortality among complicated febrile patients is also Shock(50%),followed by thrombocytopenia (33%), followed by ARDS (27%) and Hypoglycemia (5%) is least common cause for mortality. While study done by Aleem et al group shows mortality is more among patients of ARDS (32%), followed by Shock (28%), Thrombocytopenia (20%) and least common among patients having Hypoglycemia (4%).

CONCLUSION

Urinary Tract Infection is the most common disease responsible for fever in ICU patients.Rapid, effective and cheap diagnostic test should be developed to find causes of undifferentiated febrile illness and to prevent misuse of antibiotics.Febrile illness in ICU patients not only leads to significant level of morbidity among the population, but they are important cause of mortality.Complications like shock, renal failure, thrombocytopenia, ARDS are important predictors of mortality.

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