Role of Thrombocytopenia as an Independent Prognostic Marker in the Critically Ill Patients with Multiorgan Failure


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Abstract

**Background:** Thrombocytopenia is the most common coagulation problem in the ICU with an incidence of 15 to 60% depending on the definition used, population evaluated, and period of ICU stay studied.

**Objective:** The aim of this work is to detect the role of thrombocytopenia a predictor of bad outcome if associated with multiorgan failure.

**Study Design:** The study included 50 patients (30 pts. in prospective group and 20 pts. in retrospective group) with multiorgan failure and thrombocytopenia which was either present at admission or developed during ICU stay, and 20 patients in the control group with multiorgan failure without thrombocytopenia.

**Results:** Patients who developed thrombocytopenia during ICU stay, thrombocytopenia was a predictor of mortality (60%, 63% in both retrospective and prospective groups respectively versus 55% in the control group), associated with more stay in ICU, more duration of MV and high SOFA score.

The reverse in patients who improved from thrombocytopenia.

There was increase in mortality in patients who develop thrombocytopenia during hospital stay (79.2% in prospective group and 73% in retrospective group) but thrombocytopenia at admission may be improved or worsened so thrombocytopenia at admission wasn’t a predictor of mortality in our small size study.

**Conclusion:** Thrombocytopenia could be used as independent prognostic marker of critically ill patients with multiorgan failure.

**Key Words:** Thrombocytopenia – Marker – MODS.

Introduction

**THROMBOCYTOPENIA** is the most common coagulation problem in the ICU with an incidence of 15 to 60% depending on the definition used, population evaluated, and period of ICU stay studied [1-3].

About half of all ICU patients with thrombocytopenia present with the condition [3,4]; the remainder acquire it promptly [4]. The highest incidence is seen in patients with severe sepsis [1,4,5,6]. Patients receiving dialysis support also frequently exhibit thrombocytopenia [2].

**Aim of the study:**

The aim of this work was to detect the role of thrombocytopenia a predictor of bad outcome if associated with multiorgan failure.

**Subjects and Methods**

With permission from the institutional ethical committee and Department of Critical Care, Cairo University, a prospective, randomized clinical trial was conducted from 1/1/2010 to 1/1/2011 for a period of twelve months 30 patients met inclusion criteria and enrolled into the study.

**Inclusion criteria:**

Patient with MODS: >2 organ dysfunction (Organ dysfunction: Defined using the definitions used for sofa score).

**Exclusion criteria:** Clinical suspicion of thrombotic thrombocytopenic purpura (TTP), heparin induced thrombocytopenia (HIT), HIV, Pregnancy, Splenomegaly plus pancytopenia, Lymphoma, leukemia SLE, Drugs (Quinine, trimethoprim/sulfamethoxazol, glycoprotein IIb/IIIa, hydrochlorothiazide, carbamazepine, chlorpromazine, and rifampicin Patient receives chemotherapeutic drugs or radiation, Post arrest, Surgical patients receive large amount of blood transfusion >8 units and Patient stay <2 days in ICU to fu lfils the data of SOFA score.

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Study design:

Patients were divided into 3 groups: Prospective group Retrospective group and control group:

The prospective study was performed in Critical Care Medicine Department, Cairo University hospital and included any patient with MOF. In this study, consecutive Patient with MOF defined as an organ failure index (OFI) >=2. The study group included 30 patients; a control group included 20 patients with MOF without thrombocytopenia.

Retrospective study on 20 patients admitted in ICU in the Critical Care Medicine Department in the last two years.

For purposes of analysis: Patients were divided into two groups:

A- Those with MOF with persistent thrombocytopenia (platelet counts < 100,000/mm \(^3\)), either since admission or developed it and didn’t improved.

B- Those with MOF and thrombocytopenia from time of admission (platelet counts < 100,000/mm \(^3\)).

In our study patients were included with MODS who developed thrombocytopenia at any time of admission in study group, i.e. Patients might be thrombocytopenic from the start or might be non-thrombocytopenic from the start and develop thrombocytopenia later in the study group (group A).

Even though patient might be thrombocytopenic from the start and became non thrombocytopenic also included in our study, so patient might be thrombocytopenic at the 1\(^{st}\) follow-up and became non thrombocytopenic in the 2\(^{nd}\) or 3\(^{rd}\) one (group B).

All included patients were subjected to the following:

- Full clinical evaluation.
- Routine labs: CBC (complete blood count): Hemoglobin, heamatocrite, WBCS, platelet count Apparatus (SYSMEX XS 800I), In case of thrombocytopenia CBC was repeated with well coagulated sample to stand upon precise result.
- Coagulation Profile: PT, PC, INR, PTT, ABGs, LFTs: ALT (alanin aminotrnseferas), AST (asparate aminotrnseferas), BIL (bilirubin) and albumin, Kidney function tests: Na, k, creatinine and UREA
- Microbial studies: Including pan culture sputum, blood, urine, or biological fluid according to clinical suspicions prior to antibiotic administration.
- Imaging studies: To identify the source of sepsis e.g. (ultrasound and X-ray).
- Clinical data: Length of ICU stay, final outcome and need for organ supportive (vasopressors, mechanical ventilation, and/or haemodialysis) were reported for all patients until ICU discharge.

Application of SOFA scoring systems:

Patients were followed-up and assess SOFA score were assessed at time of admission and then after 24 hour then at time of discharge and give their number 1, 2, and 3 respectively.

Statistical procedure:

Data was statistically analyzed using SPSS (statistical package for social science) program version 13 for windows and Epi info program version for all the analysis a \(p\)-value <0.05 was considered statistically significant:

- Data are shown as mean, range or value and 95% confidence interval (95% CI) and frequency and percent. Chi square test was done for qualitative variable analysis and \(p\)-value <0.05 was considered significant.
- Fischer exact test for 2 x 2 tables when expected cell count of more than 25% of cases was less than 5 and \(p\)-value <0.05 was considered significant.
- Mann-Whitney test was done for quantitative variables which are not normally distributed and \(p\)-value <0.05 was considered significant.
- ANOVA test was done to compare three variables ; one qualitative variable and the other two are quantitative variables of normally distributed variables and \(p\)-value <0.05 was considered significant to detect mean and standard deviation where post hoc tests done to detect the relationship between variables within groups.
- Pearson’s correlation test was done to study correlation between two normally distributed quantitative variables and \(p\)-value less than 0.05 was considered significant.
- Repeated measures ANOVA test was performed to differentiate changes in different follow-up results of normally distributed studied variables and \(p\)-value <0.05 was considered significant.
Results

Demographic data:
- Age in the studied group:
  In our study the patient were classified into:
  - Prospective group: The mean age is 49.9 ± 20.7 years.
  - Control group: The mean age is 62.05 ± 17.05 years.
  - Retrospective group: The mean age is 44.5 ± 22.9 years.

- Gender in the studied group:
  - Prospective group: Consists of (17) male patients and (13) female patients.
  - Control group: Consists of (12) male patients and (8) female patients.
  - Retrospective group: Consists of (12) male patients and (8) female patients and there is no significant difference, \( p \)-value >0.05.

<table>
<thead>
<tr>
<th>Table (1): Association between thrombocytopenia and survival in retrospective group.</th>
</tr>
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<tbody>
<tr>
<td>Survival</td>
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<tr>
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</tr>
<tr>
<td>Died</td>
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<tr>
<td>Improver</td>
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<tr>
<td>Died</td>
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<tr>
<td>Improved</td>
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</tbody>
</table>

Survival in retrospective group (Table 1, Fig. 1):
The group was classified into:
- Group A: (Thrombocytopenic pts. and remained thrombocytopenic in the last follow-up or non-thrombocytopenic and developed it in the last follow-up):
  Number of the group 15 patients, 11 patients died, 4 patients improved.
- Group B: (Thrombocytopenic pts. and become non thrombocytopenic in the last follow-up):
  Number of the group 5 patients, 1 patient died, 4 patients improved.

And there is significance different \( p \)-value <0.05.

Survival in prospective group (Table 2, Fig. 2):
Group A: Number of the group 24 patients, 19 patients died, 5 patients improved.
- Group B: Number of the group 6 patients, 0 patient died, 6 patients improved.

And there is highly significance different \( p \)-value <0.01.

<table>
<thead>
<tr>
<th>Table (2): Association between thrombocytopenia and survival in prospective group.</th>
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<tbody>
<tr>
<td>Survival</td>
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<tr>
<td>----------</td>
</tr>
<tr>
<td>Died</td>
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<tr>
<td>Improved</td>
</tr>
<tr>
<td>Died</td>
</tr>
<tr>
<td>Improved</td>
</tr>
</tbody>
</table>

Relation between survival and multiorgan failure (Table 3, Fig. 3):
- Control Group: Number of the group 20 patients, 11 patients died, 9 patients improved.
- Retrospective Group: Number of the group 20 patients, 12 patients died, 8 patients improved.
- Prospective Group: Number of the group 30 patients, 19 patients died, 11 patients improved.

There is no significance difference, \( p \)-value >0.05.

Table (3): Survival in the studied groups (pts with MOF).

<table>
<thead>
<tr>
<th>Survival</th>
<th>Control (N=20)</th>
<th>Retrospective (N=20)</th>
<th>Prospective (N=30)</th>
<th>( X^2 ) test</th>
<th>( p ) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Died</td>
<td>11</td>
<td>12</td>
<td>19</td>
<td>0.35</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Improved</td>
<td>9</td>
<td>8</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( \% \) Died: 55.0, 60.0, 63.3

\( \% \) Improved: 45.0, 40.0, 36.7

- Relation between ages, length of ICU stay, duration of MV in Retrospective groups (Table 5, Fig. 5):

- Age: There is difference between the mean age of group (a) which is 48.87 years and group (b) which is 31.4 years in Retrospective groups this is no significant difference \( p \)-value >0.05.

- Length of ICU stay: There is no significant difference between Group (a) and Group (b) in the Length of ICU stay in Retrospective groups \( p \)-value >0.05 or difference.

- Duration of MV: There is difference between the mean of duration of MV of group (a) which is 14.33 days and group (b) which is 9.6 days but this difference is of no statistical significance.

- Sofa difference between the studied groups:

Max sofa (Table 7, Fig. 7):

- Control Group: The mean degree of MAX sofa in the control group is (9.95 ± 3.80).
- Retrospective Group: The mean degree of MAX sofa in the retrospective group is (12.1 ± 5.3).
- Prospective Group: The mean degree of MAX sofa in the prospective group is (13.2 ± 5.41).

There is no significant difference between the studied groups in Max sofa, \( p \)-value >0.05.

Delta sofa:

- Control Group: The mean degree of Delta sofa in the control group is (3.15 ± 3.3).
- Retrospective Group: The mean degree of Delta sofa in the control group is (3.7 ± 3.1).
- Prospective Group: The mean degree of Delta sofa in the prospective group is (4.9 ± 4.5) and

There is no significant difference between the studied groups in Delta sofa, \( p \)-value >0.05.

- Relation between SOFA score and thrombocytopenia in prospective group (Table 8, Fig. 8):

MAX SOFA: There is highly significant difference between Group (a) and Group (b) in the MAX SOFA in prospective groups \( p \)-value <0.01.

DELTA SOFA: There is highly significant difference between Group (a) and Group (b) in the DELTASOFA in prospective groups \( p \)-value <0.01.

- Relation between SOFA score and thrombocytopenia in retrospective groups (Table 9, Fig. 9):

MAX SOFA: There is significant difference between Group (a) and Group (b) in the MAX SOFA in Retrospective groups \( p \)-value <0.05.

DELTA SOFA: But there is no significant difference between Group (a) and Group (b) in the DELTASOFA in Retrospective groups \( p \)-value >0.05.
Table (4): The mean length of ICU stays and the mean duration of mechanical ventilation in the studied groups.

<table>
<thead>
<tr>
<th>Studied variables</th>
<th>Control (N=20) Mean±SD</th>
<th>Retrospective (N=20) Mean±SD</th>
<th>Prospective (N=30) Mean±SD</th>
<th>Kruskal Wallis test</th>
<th>p-Value</th>
<th>Post Hoc test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay in ICU</td>
<td>22.05±23.8</td>
<td>20.5±18.8</td>
<td>11.6±11.1</td>
<td>7.59</td>
<td>&lt;0.05*</td>
<td>p₁&gt;0.05</td>
<td></td>
</tr>
<tr>
<td>Duration of MV</td>
<td>13.25±20.7</td>
<td>13.15±13.1</td>
<td>8.5±11.1</td>
<td>2.13</td>
<td>&gt;0.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig. (4): The mean length of ICU stays and the mean duration of mechanical ventilation in the studied group.

Table (5): Relation between ages, length, duration of MV in Retrospective groups.

<table>
<thead>
<tr>
<th>Thrombocytopenia</th>
<th>Mann Whitney test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Group A</td>
<td>48.87±23.8</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>31.40±14.45</td>
</tr>
<tr>
<td>Length</td>
<td>Group A</td>
<td>20.67±17.26</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>20.20±25.21</td>
</tr>
<tr>
<td>Duration of MV</td>
<td>Group A</td>
<td>14.33±13.98</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>9.60±10.64</td>
</tr>
</tbody>
</table>

Fig. (5): Relation between ages, length, duration of MV in retrospective groups.

Table (6): Relation of age, length of stay, Duration of MV in prospective groups.

<table>
<thead>
<tr>
<th>Thrombocytopenia</th>
<th>Mann Whitney test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Group A</td>
<td>53.38±20.14</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>36.00±18.29</td>
</tr>
<tr>
<td>Length</td>
<td>Group A</td>
<td>12.83±12.05</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>6.83±3.31</td>
</tr>
<tr>
<td>Duration of MV</td>
<td>Group A</td>
<td>10.33±11.78</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>1.17±1.83</td>
</tr>
</tbody>
</table>

Fig. (6): Relation of age, length of stay, Duration of MV in prospective groups.

Table (7): Sota difference between the studied groups.

<table>
<thead>
<tr>
<th>Studied variables</th>
<th>Control (N=20) Mean±SD</th>
<th>Retrospective (N=20) Mean±SD</th>
<th>Prospective (N=30) Mean±SD</th>
<th>Kruskal Wallis test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX SOFA</td>
<td>9.95±3.8</td>
<td>12.1±5.3</td>
<td>13.2±5.4</td>
<td>5.03</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>DELTA SOFA</td>
<td>3.15±3.3</td>
<td>3.7±3.1</td>
<td>4.9±4.5</td>
<td>0.97</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>
Role of Thrombocytopenia as an Independent Prognostic Marker

Table (9): Relation between SOFA score and thrombocytopenia in retrospective groups.

<table>
<thead>
<tr>
<th></th>
<th>Thrombocytopenia</th>
<th>Mann Whitney test</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX SOFA</td>
<td>Group A</td>
<td>13.67±4.91</td>
<td>2.41</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>7.40±3.65</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>DELTA SOFA</td>
<td>Group A</td>
<td>3.93±3.39</td>
<td>0.39</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>3.00±2.45</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>

Fig. (9): Relation between SOFAS in retrospective groups.

Discussion

IN our study association between thrombocytopenia at admission and survival in retrospective group which include 20 patients at time of admission only 14 patients had thrombocytopenia and 6 patients weren’t thrombocytopenic, the survival of group A: 12 patients died and 8 patients improved which give significant ratio: P-value <0.05. But our results detected that the patients who started thrombocytopenic, the majority of them improved while the patient who developed thrombocytopenia later on, all of them died.

In prospective group which include 30 patients at time of admission only 17 patients have thrombocytopenia and 13 patients not yet develop thrombocytopenia the survival of group A: 7 pts. Died and 10 pts. Improved which give highly significant difference: P-value <0.01.

But our results detected that the patients who started with thrombocytopenia, the majority of them improved while the reverse occurred in patient who weren’t thrombocytopenic at the start (number of them 13 patients, 12 patients died, 1 patients improved).
These results go hand in hand with the results found by (V Hariharan and J Paddle Royal Cornwall Hospital, Truro, UK) [7] who studied a total of 1,767 patients were admitted during the study period. They excluded 119 patients with no recorded platelet data. They found a strong negative correlation between the admission platelet count and mortality, which was significant ($p=0.001$, logistic regression). To test this relationship with actual hospital mortality they divided the cohort into deciles of platelet count and plotted the data against mortality. Those with platelet counts below 67 had a mortality rate of 57.2%.

This was substantially higher than the remaining deciles ($p=0.0001$, Fisher’s exact test). We did not demonstrate any significant reduction in mortality in patients with thrombocytosis ($p=0.523$, Fisher’s exact test). They compared medical versus surgical patients and found that, for any given platelet value, the predicted outcome for surgical patients was better ($p=0.008$, $t$-test). They analyzed a model that included platelets as an additional indicator for outcome. In binary logistic regression analysis there was a significant association between platelet count and mortality (coefficient = 0.998, CI = 0.996-0.999). This association remained significant in a multiple logistic regression model, which included APACHE II ($p<0.001$). A model including both APACHE II and platelet count improved the proportion of deaths correctly predicted from 69.5% with APACHE II alone to 71.3% with platelets included.

**In our study:** We found Group A which included 24 patients, 19 of them died and 5 of them improved while Group B which included 6 patients, one of them died and 5 of them improved, And there is highly significance $p$-value <0.01.

These results go hand in hand with the results found by A Mackay et al. [8] who studied Complete data were available for 274 patients. Population demographics were as follows - 61.3% male, mean age 56.3±2.1 years, median APACHE II 20 (IQR 15 to 27), crude ICU mortality 25.6% and mean length of stay 5.2±0.7 days. Incidence of thrombocytopenia (platelet count <150 x 10$^9$/l) was 29.8% on admission to the ICU, increasing to 46.9% when considering the entire ICU stay. Comparing survivors and no survivors, no survivors had a lower trough platelet count (140 x 10$^9$/l vs. 181 x 10$^9$/l, $p=0.005$), Patients with platelet counts less than 50 x 10$^9$/l have the highest mortality (45.7% vs 27.6%, $p=0.006$). Platelet data were used to construct an ROC curve, demonstrating an area under the curve of 0.66, $p<0.001$. Platelet count correlated negatively with APACHE II ($r=0.20$, $p<0.001$) but did not correlate significantly with length of stay or duration of mechanical ventilation.

**But in our study** Relation between ages, length, duration of MV was as the following: In Retrospective group although there is no significant value between Group (a) and Group (b) in age, $p$-value >0.05, but there is difference between the mean age of group (a) which is 48.87 year and the mean age of group (b) which is 31.4 year. and there is no significant value between Group (a) and Group (b) in Length of ICU stay in retrospective group, $p$-value >0.05, or difference and although there is no significant value between Group (a) and Group (b) in In duration of MV in retrospective group, $p$-value >0.05. But there is difference between the mean of duration of MV in retrospective group - which is 14.33 days in group (a) and 9.6 days in group (b). In prospective group although there is no significant value between Group (a) and Group (b) in age, $p$-value >0.05, but there is difference between the mean age of group (a) which is 48.87 years and the mean age of group (b) which is 36 years and there is no significant value between Group (a) and Group (b) in Length of ICU stay in prospective group, $p$-value >0.05, but there is difference in length of stay between group (a) which mean length of stay is (12.8) days and group (b) which mean length of stay is (6.8) days and although there is highly significant value between Group (a) and Group (b) in duration of MV in prospective group, $p$-value <0.01, the mean duration of MV in group (a) is (10.33) days but in group (b) the mean duration of MV is (1.17) days.

**In our study:** There is significant ratio between max sofa and retrospective groups $p$-value <0.05 result tell us mean of MAX SOFA in group A is 13.67±4.91 mean of MAX SOFA in group B is 7.40±3.65. But there is no significant difference between delta sofa in retrospective groups, $p$-value >0.05.

Mean of DELTA SOFA in group A 3.93±3.39 mean of DELTA SOFA in group B 3.00±2.45.

Relation between SOFA in prospective groups, There is highly significant relation between max sofa and thrombocytopenia, $p$-value <0.01. Mean of MAX SOFA in group A is 14.75 ±4.66 mean of MAX SOFA in group B 7.17±3.66 and also There is highly significant relation between delta sofa and thrombocytopenia, $p$-value <0.01. Result tells us mean of Delta SOFA in group A is 6.08±4.18 while mean of Delta SOFA in group B is 0.00±0.00. From this result we can say that group A carried
high risk of mortality and highly strong correlation with sofa but group B carried low risk of mortality and highly strong correlation with sofa. So from this result we can depend on the platelets alone in thrombocytopenic patients as prognostic marker of mortality if we classify thrombocytopenia in the same manner.

In our study we didn’t study as aim, association of Thrombocytopenia with mortality in hospitalized patients with low risk of death.

But other study as M Oliveira, R Gomes, L Silva, F Ribeiro, C Boaventura, A Camelier, R Passos, D Flores, J Teles, A Farias and O Messeder Hospital Portugues, Salvador Bahia, Brazil [9] who says that, During the period of observation, 215 patients were admitted to the ICU (57.5% male), with a median age 65.0 years (IQR 54-77) and APACHE II score 14.0 (IQR 10.0-19.0). One hundred and seventy-six subjects (81.9%) were alive after a 14-day follow-up. Seventy patients (32.6%) developed thrombocytopenia during the study. Patients who ever developed thrombocytopenia had a higher ICU mortality (28.6% vs 13.0%, respectively; *p*<0.006) and a higher consumption of blood products (24% vs. 2%, *p*<0.0001). However, both groups had the same APACHE II score (15.15±6.1 vs 15.15±7.2, *p*<0.99) and ICU stay (8.2±7.1 vs. 8.4±12.8, *p*<0.93).

In our study: As the use of drugs induced thrombocytopenia may affect the result we found the following In Control group The ratio of Anticoagulant use is 16 patients receive Anticoagulant from total 20 patients and the ratio is 16/20=80%.

In Retrospective group the ratio of Anticoagulant use is 13 patients receive Anticoagulant from total 20 patients and the ratio is 13/20=65%. In Prospective group the ratio of Anticoagulant use is 17 patients receive Anticoagulant from total 30 patients and the ratio is 17/30=56% we found that thrombocytopenic groups are less likely to receive Anticoagulant.

These results go hand in hand with the results found by Crook et al. [10] who found that of 261 patients (mean APACHE II score = 25.5 ± 8.4), 116 (44%), 95% confidence interval [CI] = 38-51%) had thrombocytopenia (27% [22-33%] on ICU admission, and 17% [13-22%] developed it during the ICU stay). Patients with thrombocytopenia versus those without were more likely to require mechanical ventilation (100% vs 87%, *p*<0.05) and platelet transfusion (7% vs. 0%, *p*<0.03), and less likely to receive heparin (18% vs. 31%, *p*<0.02). Among 34 risk factors, the independent risk factors for thrombocytopenia development during the ICU was ASA or nonsteroidal anti-inflammatory drug use (hazard ratio [HR]=3.0, 95% CI=1.4-6.5) and dialysis (HR=3.0 [1.1-7.1]); conditions such as severe sepsis were not predictive. Among 261 patients, 33 (13%) patients had hepatic-induced thrombocytopenia tests (serotonin release assay); none were positive. Patients who ever developed thrombocytopenia versus those who did not had a long stay ICU (12 days vs. 8 days), but a similar hospital stay (30 days vs. 23 days), ICU mortality (31% vs. 24%), and hospital mortality (46% vs. 34%). A platelet count <150 x 10^9/l was not independently predictive of mortality after adjusting for age and illness severity (HR=1.0 [0.6-1.7]), whereas platelet count <50 x 10^9/l was (HR 8.3 [3.8-18.3]).

In our study: The group A patients in retrospective and prospective (n=39) had longer ICU stay, higher SOFA as well as higher mortality rate.

These results go hand in hand with the results found by NCM Youssef, CBD Roda, CEASTILHO, CA Silveira, CIM Guedes, CB Santos, FM Rodrigues, GTB Mendes, KC Abrão and A Réa-Neto CEPETI-Centro de Estudos e Pesquisa em Terapia Intensiva, Brazil [11] who studied The total of 326 patients were analyzed in 7 months. The group of thrombocytopenia patients (n=94) had longer ICU stay, higher APACHEII, SAPSII, LODS and SOFA as well as higher mortality.

Conclusion:

Patients who developed thrombocytopenia during ICU stay, thrombocytopenia was a predictor of mortality, more stay in ICU, more duration of MV and high SOFA score.

The reverse in patients who improved from thrombocytopenia.

There was increase in mortality in patients who develop thrombocytopenia during hospital stay but thrombocytopenia at admission may be improved or worsened so thrombocytopenia at admission wasn’t a predictor of mortality in our small size study.

References

2. STRAUSS R., WEHLER M., MEHLER K., et al.: Thrombocytopenia in patients in the medical intensive care unit:


