INTRODUCTION

Many studies have examined the correlation between markers of inflammation and psychiatric diagnoses involving depression or suicidality. 1, 2

Inflammatory markers of note include neutrophil-to-lymphocyte ratios, mean platelet volumes, leukocyte numbers, and platelet to lymphocyte ratios. 1, 3

It has been seen that higher levels of subclinical inflammation are correlated with more severe psychiatric diagnoses. 2

No such study has examined this correlation in the Emergency Department.

MATERIALS & METHODS

Retrospective chart review of selected patients collected from CBCs:

- neutrophil-to-lymphocyte ratios
- mean platelet volumes
- leukocyte numbers
- platelet to lymphocyte ratios

Additional data collected:

- Emergency department disposition
- Time of the lab blood draw
- age, gender
- history of unipolar depression
- selective-serotonin reuptake inhibitor use
- positive urine drug screen (excluding cannabis)
- history of hypertension

Multiple linear regression analysis tested if group differences predicted increased levels of inflammatory markers

HYPOTHESIS

We hypothesize that patients with a chief complaint of suicidal ideation found to require admission to a psychiatric inpatient unit will have higher levels of inflammatory markers than patients with the same complaint who are discharged from the emergency department.

RESULTS

Dependent Variable Mean Values by Independent Categorical Variables

<table>
<thead>
<tr>
<th>Discharge Status</th>
<th>Neutrophil/Lymphocyte Ratio</th>
<th>Platelet/Lymphocyte Ratio</th>
<th>Leukocyte Number (Cells/mL)</th>
<th>Mean Platelet Volume (femtoliters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharged</td>
<td>2.23</td>
<td>114.60</td>
<td>7.77</td>
<td>8.66</td>
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<tr>
<td>Admitted</td>
<td>2.88</td>
<td>122.88</td>
<td>8.24</td>
<td>8.56</td>
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<td>Time</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>AM</td>
<td>2.17</td>
<td>111.52</td>
<td>7.97</td>
<td>8.45</td>
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<tr>
<td>PM</td>
<td>2.79</td>
<td>123.13</td>
<td>8.03</td>
<td>8.70</td>
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<tr>
<td>Gender</td>
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</tr>
<tr>
<td>Male</td>
<td>2.60</td>
<td>115.25</td>
<td>7.95</td>
<td>8.46</td>
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<tr>
<td>Female</td>
<td>2.51</td>
<td>118.80</td>
<td>8.01</td>
<td>8.75</td>
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<td>Depression History</td>
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<tr>
<td>Present</td>
<td>2.44</td>
<td>124.53</td>
<td>7.72</td>
<td>8.63</td>
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<tr>
<td>Absent</td>
<td>2.68</td>
<td>112.72</td>
<td>8.32</td>
<td>8.57</td>
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<td>SSRI use</td>
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<tr>
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<td>2.36</td>
<td>119.42</td>
<td>7.96</td>
<td>8.53</td>
</tr>
<tr>
<td>Absent</td>
<td>2.65</td>
<td>118.5</td>
<td>8.03</td>
<td>8.64</td>
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<td>Positive Drug Screen</td>
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<td>118.16</td>
<td>8.06</td>
<td>8.56</td>
</tr>
<tr>
<td>Absent</td>
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<td>119.25</td>
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<td>8.75</td>
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<tr>
<td>Absent</td>
<td>2.42</td>
<td>116.01</td>
<td>8.09</td>
<td>8.52</td>
</tr>
</tbody>
</table>

- Only age significantly predicted leukocyte number (β = -0.251, p = 0.013). Age (β = -0.247, p = 0.014) and hypertension (β = 0.224, p = 0.026) significantly predicted mean platelet volume. Leukocyte number and mean platelet volume tend to decrease with increasing age. Mean platelet volume is increased with the presence of hypertension.
- Emergency department disposition did not have significant effect on any inflammatory marker.
- The overall regressions showed that assessed variables did not explain a significant amount of the variance in neutrophil-to-lymphocyte ratio (R² = 0.083, F (8, 133) = 1.509, p = 0.160), platelet-to-lymphocyte ratio (R² = 0.039, F (8, 133) = 0.674, p = 0.714), leukocyte number (R² = 0.073, F (8, 133) = 1.315, p = 0.241), and mean platelet volume (R² = 0.095, F (8, 133) = 1.746, p = 0.093).
- No variable significantly predicted neutrophil-to-lymphocyte ratio or platelet-to-lymphocyte ratio (p > 0.05).

DISCUSSION

There was no significant correlation between disposition and the assessed markers of inflammation in patients who presented to the Emergency Department with Suicidal Ideations.

These inflammatory markers are not useful in guiding disposition decisions in suicidal patients in the emergency department.

Future Direction for research

Could inflammatory markers be used to detect occult psychiatric illness in emergency department patients?

Could inflammatory markers be used to differentiate patients with incidental from patients with depression and suicidal ideations in the emergency department?

REFERENCES


ACKNOWLEDGEMENTS

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