The purpose of this study was to compare the different methods of platelet functional assay results among patients presenting for routine and acute coronary angiography. Our subject population comprised of 102 subjects (95 males and 7 females) who underwent both coronary angiography and platelet functional assays performed: Siemens PFA-100 (ADP/COLL and EPI/COLL) cartridges, Accumetrics system with the aspirin and P2Y12 cartridges, Chrono-Log VerifyNow whole blood platelet aggregation analyzer using ADP (10.0, 5.0 µM), collagen (1.5 µg/ml) and epinephrine (0.2 µM) as agonists. Of the 102 subjects 95 were receiving aspirin (ASA) therapy (340 mg) and 38 were not on ASA therapy. Three patients were on clopidogrel only. If the 102 subjects 95 were receiving some ASA therapy (81 or 325 mg) of which 62 were on both ASA and clopidogrel. Three subjects were on clopidogrel only. Of the 102 subjects, 95 were receiving some ASA therapy (81 or 325 mg) of which 43 females) with an average age of 64±12 years. Each subject had the following platelet functional tests performed: Siemens PFA-100 (ADP/COLL and EPI/COLL) cartridges, Accumetrics system: Aspirin and P2Y12 Cartridges - Chrono-Log 570VS whole blood platelet aggregometry using ADP (10.0, 5.0 µM), collagen (1.5 µg/ml) and epinephrine (0.2 µM) as agonists. These data suggest that there is generally poor agreement among methodologies for assessing platelet function in this study population. Three recent clinical data studies are suggesting an increasing role for platelet function testing in patients with unstable coronary heart disease. These findings suggest that alternative methods for rapid assessment of efficacy of anti-platelet therapy will be required.

STUDY OF PLATELET ACTIVITY IN ROUTINE AND ACUTE CORONARY ANGIOGRAPHY

INTRODUCTION

- Studies that have compared platelet functional assays have shown a lack of concordance when comparing the laboratory results in a variety of studies.
- The purpose of this study was to compare the different methods of platelet functional assay results among patients presenting for routine and acute coronary angiography.

MATERIALS AND METHODS

- Subjects: Population comprised of 102 subjects (95 males and 7 females) with an average age of 64±12 years.
- Of the 102 subjects, 95 were receiving some ASA therapy (81 or 325 mg) of which 43 females) with an average age of 64±12 years.
- Three subjects were on clopidogrel only.
- Each subject had the following platelet functional tests performed: Siemens PFA-100 (ADP/COLL and EPI/COLL) cartridges, Accumetrics system: Aspirin and P2Y12 Cartridges.
- Chronic-log whole blood platelet aggregometry using ADP (10.0, 5.0 µM), collagen (1.5 µg/ml) and epinephrine (0.2 µM) as agonists.

RESULTS

- Siemens PFA-100: (ADP/COLL and EPI/COLL) cartridges
- Accumetrics system: Aspirin and P2Y12 Cartridges
- Chronic-log whole blood platelet aggregometry using ADP (10.0, 5.0 µM), collagen (1.5 µg/ml) and epinephrine (0.2 µM) as agonists.

DISCUSSION

- This study is in high risk population demonstrating both the varied patient response to standard anti-platelet regimens and poor agreement among methodologies for assessing platelet function.
- Conclusion: all assays are dissociated between platelet response and non-response to anti-platelet therapies.
- It should be emphasized that current methods of assessing platelet function are discordant because they probably assess different aspects of the platelet response to different agonists.
- It may be necessary to employ multiple assays to detect individual platelet responses.

REFERENCES

Bernard J. Rubal, Ph.D, Brooke Army Medical Center, Ft. Sam Houston, TX.

*David L. McGlasson, MS, CLS/NCA; Gilberto Patino, MD; Anan D. Shah, MD, Wilford Hall Medical Center, Lackland AFB, TX.
Bernard J. Rubal, Ph.D, Brooke Army Medical Center, Ft. Sam Houston, TX.

Table 1: Agreement and Discordance of Different Platelet Function Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Agreement</th>
<th>Discordance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siemens PFA-100</td>
<td>75.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Accumetrics ABA</td>
<td>75.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>VerifyNow Aspirin Assay</td>
<td>75.0%</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

Kappa=0.21, p=0.026.

Downloaded from www.ehj.org by [Ft. Sam Houston] on 07/02/2000.

Significant negative correlation -.291, P=0.0035

**TABLE 1** Interpretaion of PFA-100 Results

<table>
<thead>
<tr>
<th>Test</th>
<th>TGT (s)</th>
<th>p&lt;0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siemens PFA-100</td>
<td>150-250</td>
<td>0.001</td>
</tr>
<tr>
<td>Accumetrics ABA</td>
<td>75-150</td>
<td>0.001</td>
</tr>
<tr>
<td>VerifyNow Aspirin Assay</td>
<td>75-150</td>
<td>0.001</td>
</tr>
</tbody>
</table>

REFERENCES