**Supplemental material**:

**Table 1** ***Patient demographics, vascular risk factors compared with PMP/EMP levels***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Demographics/risk factors (N)** | **PMP**  (logn+/-SD) | **P value** | **EMP**  (logn+/-SD) | **P value** |
| **Age groups**  50-59 (3)  60-69 (8)  70-79 (20)  80-89 (11) | 8.66+/-0.86  8.85+/-1.02  8.87+/-0.93  9.46+/-0.72 | 0.28 | 6.29+/-1.31  5.61+/-0.58  5.58+/-0.79  6.01+/-1.13 | 0.42 |
| **Sex**  Men (31)  Women (11) | 8.98+/-1.01  9.09+/-0.52 | 0.73 | 5.69+/-0.82  5.92+/-1.09 | 0.46 |
| **Degree of stenosis %**  50-69 (14)  70-99 (28) | 9.21+/-0.95  8.90+/-0.88 | 0.30 | 5.45+/-0.49  5.90+/-1.01 | 0.13 |
| **Ischemic heart disease**  Present (13)  Absent (29) | 9.26+/-0.76  8.89+/-0.95 | 0.23 | 6.36+/-1.27  5.48+/-0.47 | **\*0.002** |
| **Blood pressure**  Normotensive (8)  Normotensive with Medication (26)  Hypertensive with medication (6) | 8.60+/-0.30  9.11+/-0.79  9.05+/-0.82 | 0.38 | 5.90+/-0.68  5.73+/-0.93  5.65+/-1.07 | 0.86 |
| **Smoking status**  Smoking (25)  Non-smoker (17) | 8.92+/-0.94  9.14+/-0.87 | 0.44 | 5.61+/-0.70  5.95+/-1.11 | 0.23 |
| **Statin treatment**  Statin use, <6M before scan (23)  Statin, >6 M before scan (14)  No statin (5) | 9.34+/-1.37  8.95+/-0.89  8.98+/-1.37 | 0.68 | 5.60+/-0.62  5.74+/-0.94  6.52+/-1.38 | 0.11 |
| **Diabetes status**  Diabetes Mellitus ( 4)  None (38) | 9.38 +/-0.67  8.97+/-0.93 | 0.39 | 5.77+/-0.91  5.60+/-0.75 | 0.74 |
| **Atrial Fibrillation**  Present (7)  Absent (35) | 9.27+/-0.83  8.95+/-0.92 | 0.40 | 5.96+/-1.21  5.70+/-0.83 | 0.51 |
| **Type of cerebral ischaemia**  Stroke (12)  TIA (23)  AmF (7) | 9.25+/-0.64  8.93+/-0.99  8.71+/-0.78 | 0.11 | 6.13+/-1.04  5.69+/-0.88  5.28+/-0.20 | 0.12 |
| **Ipsilateral MRIPH**  Positive (26)  Negative (16) | 8.86 +/- 0.88  9.24 +/-0.94 | 0.19 | 5.53 +/- 0.63  6.11 +/-1.14 | **\*0.038** |
| **Contralateral MRIPH**  **status**  Positive (15)  Negative (27) | 8.99+/-1.01  9.02+/-0.86 | 0.92 | 5.86+/-0.90  5.69+/-0.91 | 0.56 |
| **Contralateral internal carotid artery**  Occluded (10)  Non-occluded (32) | 9.34+/-0.78  8.90+/-0.93 | 0.20 | 6.23+/-0.98  5.60+/-0.82 | 0.051 |
| **Type of antiplatelet**  None (8)  Asprin (11)  Asprin and clopidogrel (3)  Asprin and dipyridamole (20) | 9.35+/-0.88  9.06+/-0.58  9.53+/-0.68  8.76+/-1.05 | 0.31 | 6.36+/-1.38  5.49+/-0.46  5.93+/-1.48  5.62+/-0.68 | 0.16 |
| **Median days from first symptom to blood test/MRI (IQR)** | Median 35 days, interquartile range (IQR) 59 | | | |

**Table 2 *Platelet and endothelial derived particles are not associated with carotid plaque hemorrhage on Magnetic resonance imaging (MRI PH).***

|  |  |  |  |
| --- | --- | --- | --- |
| **MP** (c/µl- Log transformed +/-SD) | **MRI PH positive (n=18)** | **MRI PH negative (n=24)** | **MRI PH positive vs. negative (P value)** |
| **PMP** | 8.86 +/-0.87 | 9.24 +/- 0.94 | P=0.30 |
| **EMP** | 5.53 +/-0.63 | 6.11 +/-1.14 | P=0.10 |

**Figure 1 *Summary of the pathophysiological evidence of microparticle involvement in thrombo-embolic stroke***

**Proatherogenic factors**

**Proinflammatory**

**Procoagulant**

Shear stresses by atherosclerotic stenotic vessels increase further MP.

Shear stressed MP increase CD inflammatory cells.

**Thrombo-embolic stroke**

**Forms thrombus/emboli**

Recruitment of more platelets

* PMP contain RANTES: a potent chemo-attractant for monocytes and T-cells
* PMP induce expression of COX-1 and prostacyclines; thought to worsen ischaemic infarcts.
* EMP impairs nitrous oxide which normally inhibits monocyte adhesion
* Oxidised phospholipids (OxPL) on MP’s may form an active biological component involved in atherogenesis.
* MP stimulate expression of adhesion molecules, particularly ICAM’s, interleukins and TNFα.
* EMP impairs nitrous oxide (increases arterial stiffness and platelet aggregation involved in atherosclerosis)
* PMP are contained in carotid plaque contain active caplain which regulate metallo-proteinases –MMP’s (MMP’s contributes to the unstable plaque)
* **PMP within carotid plaques and its membrane surface**: (Aminophospholipid) accelerate activation of coagulation factors 2a, 5a, 8, 9a, 10a, 11. MP are the main reservoir for TF activity which promotes coagulation.
* **MP antigens** : MP’s contains various antigens GPIb, GP IIb, GP IIIa, VWF, selectin and thromboxane A2 which promote coagulation

**PMP/EMP**