

Improving performance values of 3D speckle tracking in arterial hypertension and paroxysmal atrial fibrillation by using novel strain parameters

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Supplementary Table 1. Kruskal Wallis non parametric test with Benjamini-Hockberg p-value correction of left atrial volume index, standard 3D strain and 3D strain rate variables calculated by homologous times approach at pre active time and atrial diastole of our population divided by groups. LAVi – Left atrial volume index; LVMASSi – left ventricular mass index; GCS – Global circumferential strain; GLS – Global longitudinal strain; LAESV3D – Left atrial end systolic volume 3D; LAEDV3D – Left atrial end diastolic volume 3D; Vh10- Volume at tenth homologous time; Vr10- Volume rate at tenth homologous times; Vh5- Volume at fifth homologous time; Vr5- Volume rate at fifth homologous time; GCSH10- Global circumferential strain at tenth homologous times; GLSH10 – Global longitudinal strain at tenth homologous time; GCSH5 – Global circumferential strain at fifth homologous time; GLSH5 – Global longitudinal strain at fifth homologous time; GCSr10 – Global circumferential strain rate at tenth homologous time; GLSr10 – Global longitudinal strain rate at tenth homologous time; GCSr5 – Global circumferential strain rate at fifth homologous time; GLSr5 – Global longitudinal strain rate at fifth homologous time; * Significant P-value set at <0.05.

| P - Value | 2D ECHOCARDIOGRAPHIC VARIABLES | | | | |
|----------------|--------------------------------|---------------|-------------------|-------------------|-------------------|
| | CONTROL | PAF | HT | HT_LVH | PAF_LVH |
| <i>LAVi</i> | | | | | |
| CONTROL | 1 | 0.008* | 0.020* | 0.009* | <0.001* |
| PAF | 0.008* | 1 | 1 | 1 | 1 |
| HT | 0.020* | 1 | 1 | 1 | 0.223 |
| HT_LVH | 0.009* | 1 | 1 | 1 | 1 |
| PAF_LVH | <0.001* | 1 | 0.223 | 1 | 1 |
| <i>LVMASSi</i> | | | | | |
| CONTROL | 1 | 0.777 | 1 | <0.001* | <0.001* |
| PAF | 0.777 | 1 | 1 | 0.002* | 0.03* |
| HT | 1 | 1 | 1 | <0.003* | <0.001* |
| HT_LVH | <0.001* | 0.002* | <0.003* | 1 | 1 |
| PAF_LVH | <0.001* | 0.03* | <0.001* | 1 | 1 |

P - Value**STANDARD STRAIN VARIABLES AND 3D VOLUME**

| | CONTROL | PAF | HT | HT_LVH | PAF_LVH |
|-----------------------|-------------------|---------------|-------|--------|-------------------|
| <i>GLS</i> | | | | | |
| CONTROL | 1 | 1 | 0.985 | 1 | 0.004* |
| PAF | 1 | 1 | 1 | 1 | 1 |
| HT | 0.985 | 1 | 1 | 1 | 0.644 |
| HT_LVH | 1 | 1 | 1 | 1 | 0.888 |
| PAF_LVH | 0.004* | 1 | 0.644 | 0.888 | 1 |
| <i>GCS</i> | | | | | |
| CONTROL | 1 | 0.022* | 1 | 1 | 0.018* |
| PAF | 0.022* | 1 | 0.388 | 1 | 1 |
| HT | 1 | 0.388 | 1 | 1 | 0.438 |
| HT_LVH | 1 | 1 | 1 | 1 | 1 |
| PAF_LVH | 0.018* | 1 | 0.438 | 1 | 1 |
| <i>LAEDV3D</i> | | | | | |
| CONTROL | 1 | 0.064 | 0.304 | 0.595 | 0.006* |
| PAF | 0.064 | 1 | 1 | 1 | 1 |
| HT | 0.304 | 1 | 1 | 1 | 1 |
| HT_LVH | 0.595 | 1 | 1 | 1 | 1 |
| PAF_LVH | 0.006* | 1 | 1 | 1 | 1 |
| <i>LAESV3D</i> | | | | | |
| CONTROL | 1 | 0.003* | 0.146 | 0.171 | <0.001* |
| PAF | 0.003* | 1 | 1 | 1 | 1 |
| HT | 0.146 | 1 | 1 | 1 | 1 |
| HT_LVH | 0.171 | 1 | 1 | 1 | |
| PAF_LVH | <0.001* | 1 | 0.773 | 1 | 1 |

P - Value**3D STRAIN VARIABLES AND VOLUME AT HOMOLOGOUS TIMES**

TENTH HOMOLOGOUS TIME (Pre active time)

| | CONTROL | PAF | HT | HT_LVH | PAF_LVH |
|----------------------|-------------------|-------------------|-------------------|---------------|-------------------|
| <i>GCSH10</i> | | | | | |
| CONTROL | 1 | 0.600 | 0.410 | 0.600 | 0.600 |
| PAF | 0.600 | 1 | 0.410 | 0.410 | 0.770 |
| HT | 0.410 | 0.410 | 1 | 0.600 | 0.410 |
| HT_LVH | 0.600 | 0.410 | 0.600 | 1 | 0.600 |
| PAF_LVH | 0.600 | 0.770 | 0.410 | 0.600 | 1 |
| <i>GLSH10</i> | | | | | |
| CONTROL | 1 | 0.690 | 0.560 | 0.690 | 0.840 |
| PAF | 0.690 | 1 | 0.690 | 0.840 | 0.690 |
| HT | 0.560 | 0.690 | 1 | 0.690 | 0.560 |
| HT_LVH | 0.690 | 0.840 | 0.690 | 1 | 0.690 |
| PAF_LVH | 0.840 | 0.690 | 0.560 | 0.690 | 1 |
| <i>Vh10</i> | | | | | |
| CONTROL | 1 | <0.001* | <0.001* | 0.002* | <0.001* |
| PAF | <0.001* | 1 | 0.140 | 0.780 | 0.280 |
| HT | <0.001* | 0.140 | 1 | 0.340 | 0.04* |
| HT_LVH | 0.002* | 0.780 | 0.340 | 1 | 0.340 |
| PAF_LVH | <0.001* | 0.280 | 0.04* | 0.340 | 1 |

FIFTH HOMOLOGOUS TIME (Atrial diastole)

| | CONTROL | PAF | HT | HT_LVH | PAF_LVH |
|---------------------|-------------------|-------------------|-------|---------------|-------------------|
| <i>GCSH5</i> | | | | | |
| CONTROL | 1 | <0.001* | 0.251 | 0.173 | <0.001* |
| PAF | <0.001* | 1 | 0.134 | 0.069 | 0.88 |
| HT | 0.251 | 0.134 | 1 | 0.548 | 0.069 |
| HT_LVH | 0.173 | 0.069 | 0.548 | 1 | 0.164 |
| PAF_LVH | <0.001* | 0.880 | 0.069 | 0.164 | 1 |
| <i>GLSH5</i> | | | | | |
| CONTROL | 1 | 0.202 | 0.187 | 0.421 | 0.039* |
| PAF | 0.202 | 1 | 0.955 | 0.968 | 0.084 |
| HT | 0.187 | 0.955 | 1 | 0.949 | 0.082 |
| HT_LVH | 0.421 | 0.968 | 0.949 | 1 | 0.197 |
| PAF_LVH | 0.039* | 0.084 | 0.082 | 0.197 | 1 |
| <i>Vh5</i> | | | | | |
| CONTROL | 1 | 0.031* | 0.120 | 0.041* | 0.031* |
| PAF | 0.031* | 1 | 0.379 | 0.968 | 0.463 |
| HT | 0.120 | 0.379 | 1 | 0.379 | 0.347 |
| HT_LVH | 0.041* | 0.968 | 0.379 | 1 | 0.568 |
| PAF_LVH | 0.031* | 0.463 | 0.347 | 0.568 | 1 |

P - Value

3D STRAIN RATE VARIABLES AND VOLUME RATE AT HOMOLOGOUS TIMES

TENTH HOMOLOGOUS TIME (Pre active time)

| | CONTROL | PAF | HT | HT_LVH | PAF_LVH |
|---------------|---------------|---------------|---------------|---------------|---------------|
| <i>GCSr10</i> | | | | | |
| CONTROL | 1 | 0.001* | 0.001* | 0.001* | 0.001* |
| PAF | 0.001* | 1 | 0.320 | 0.670 | 0.670 |
| HT | 0.001* | 0.320 | 1 | 0.760 | 0.290 |
| HT_LVH | 0.001* | 0.670 | 0.760 | 1 | 0.500 |
| PAF_LVH | 0.001* | 0.670 | 0.290 | 0.500 | 1 |
| <i>GLSr10</i> | | | | | |
| CONTROL | 1 | 0.001* | 0.001* | 0.001* | 0.001* |
| PAF | 0.001* | 1 | 0.780 | 0.680 | 0.051 |
| HT | 0.001* | 0.780 | 1 | 0.680 | 0.051 |
| HT_LVH | 0.001* | 0.680 | 0.680 | 1 | 0.247 |
| PAF_LVH | 0.001* | 0.051 | 0.051 | 0.247 | 1 |
| <i>Vr10</i> | | | | | |
| CONTROL | 1 | 0.040* | 0.008* | 0.103 | 0.008* |
| PAF | 0.040* | 1 | 0.955 | 0.780 | 0.588 |
| HT | 0.008* | 0.955 | 1 | 1 | 0.955 |
| HT_LVH | 0.103 | 0.955 | 1 | 1 | 0.588 |
| PAF_LVH | 0.008* | 0.588 | 0.588 | 0.588 | 1 |

FIFTH HOMOLOGOUS TIME (Atrial diastole)

| | CONTROL | PAF | HT | HT_LVH | PAF_LVH |
|--------------|---------|-------|-------|--------|---------|
| GCSr5 | | | | | |
| CONTROL | 1 | 0.930 | 0.720 | 0.930 | 0.930 |
| PAF | 0.930 | 1 | 1 | 1 | 1 |
| HT | 0.720 | 1 | 1 | 0.930 | 1 |
| HT_LVH | 0.930 | 1 | 0.930 | 1 | 1 |
| PAF_LVH | 0.930 | 1 | 1 | 1 | 1 |
| GLSr5 | | | | | |
| CONTROL | 1 | 0.880 | 0.880 | 0.880 | 0.880 |
| PAF | 0.880 | 1 | 0.880 | 0.880 | 0.880 |
| HT | 0.880 | 0.880 | 1 | 0.880 | 0.880 |
| HT_LVH | 0.880 | 0.880 | 0.880 | 1 | 0.970 |
| PAF_LVH | 0.880 | 0.880 | 0.880 | 0.970 | 1 |
| Vr5 | | | | | |
| CONTROL | 1 | 1 | 1 | 1 | 1 |
| PAF | 1 | 1 | 1 | 1 | 1 |
| HT | 1 | 1 | 1 | 1 | 1 |
| HT_LVH | 1 | 1 | 1 | 1 | 1 |
| PAF_LVH | 1 | 1 | 1 | 1 | 1 |
