

高尿酸血症を合併した心不全患者における
トピロキソスタットとアロプリノールのランダム化比較試験

The **E**ffect of **X**anthine Oxidase Inhibitor
in **C**hron**I**c heart failure patients
complica**TED** with hyper-**U**ricemi**A**
Excited-UA study

追加解析報告書
Ver 1.2

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1. FAS から心房細動症例を除外した集団

1.1. トロポニン I

1. FAS から心房細動症例を除外した集団

除外した心房細動症例の定義は、心不全の原疾患もしくは合併症に心房細動があり、かつ登録時の心電図検査でも心房細動の所見があった症例、とした。

1.1. トロポニン I

表 1.1.1. [FAS] トロポニン I

| 変数 | 観察 ポイント | 統計量 | トピロキソスタット群 | アロプリノール群 | 群間比較 P 値 | |
|------------------------------|------------|---------------------------|---------------------------|--------------------|-------------------|-------|
| hs トロポニン I (pg/mL) | 測定値 | 0 週 | n | 40 | 45 | |
| | | | Mean ± SD | 27.5 ± 41.9 | 17.9 ± 23.7 | 0.19 |
| | | | Median [Q1, Q3] | 8.5 [4.9, 29.4] | 7.9 [6.4, 17.9] | 1.00 |
| | | | Min, Max | 1.5, 152.7 | 1.6, 132.3 | |
| | | 12 週 | n | 39 | 43 | |
| | | | Mean ± SD | 34.0 ± 58.6 | 21.6 ± 34.5 | 0.24 |
| | | | Median [Q1, Q3] | 9.6 [4.6, 29.2] | 9.4 [5.1, 21.9] | 1.00 |
| | | | Min, Max | 2.0, 294.8 | 1.1, 197.9 | |
| | | 24 週 | n | 38 | 42 | |
| | | | Mean ± SD | 26.3 ± 38.2 | 22.7 ± 57.6 | 0.75 |
| | | | Median [Q1, Q3] | 9.2 [5.7, 24.8] | 7.7 [4.5, 21.1] | 0.48 |
| | | | Min, Max | 1.8, 145.0 | 1.5, 375.3 | |
| | 変化量 | 12 週 | n | 39 | 43 | |
| | | | Mean ± SD | 9.2 ± 46.5 | 3.7 ± 30.5 | 0.52 |
| | | | Median [Q1, Q3] | 0.3 [-1.0, 3.8] | 0.1 [-1.7, 2.0] | 0.30 |
| | | | Min, Max | -17.9, 287.7 | -40.7, 190.4 | |
| | | | One-sample t-test | 0.23 | 0.43 | |
| | | | Wilcoxon signed-rank test | 0.14 | 0.90 | |
| | | 24 週 | n | 38 | 42 | |
| | | | Mean ± SD | 1.7 ± 15.6 | 7.1 ± 53.1 | 0.55 |
| | | | Median [Q1, Q3] | 1.2 [-0.6, 3.3] | -0.5 [-2.9, 0.8] | 0.012 |
| | | | Min, Max | -68.9, 42.3 | -18.4, 340.7 | |
| | | | One-sample t-test | 0.50 | 0.39 | |
| | | | Wilcoxon signed-rank test | 0.038 | 0.13 | |
| 変化率 | 12 週 | n | 39 | 43 | | |
| | | Mean ± SD | 115.0 ± 647.9 | 62.6 ± 388.0 | 0.65 | |
| | | Median [Q1, Q3] | 6.4 [-11.5, 27.1] | 1.9 [-18.9, 20.5] | 0.22 | |
| | | Min, Max | -55.9, 4052.1 | -44.9, 2538.7 | | |
| | | One-sample t-test | 0.27 | 0.30 | | |
| | | Wilcoxon signed-rank test | 0.06 | 0.70 | | |
| | 24 週 | n | 38 | 42 | | |
| | | Mean ± SD | 22.0 ± 39.8 | 20.6 ± 156.3 | 0.96 | |
| | | Median [Q1, Q3] | 20.1 [-5.0, 43.2] | -9.2 [-23.0, 18.2] | 0.003 | |
| | | Min, Max | -49.4, 126.9 | -53.6, 984.7 | | |
| | | One-sample t-test | 0.002 | 0.40 | | |
| | | Wilcoxon signed-rank test | 0.001 | 0.37 | | |
| 対数変換 hs トロポニン I (ln (pg/mL)) | 測定値 | 0 週 | n | 40 | 45 | |
| | | | Mean ± SD | 2.46 ± 1.27 | 2.37 ± 0.97 | 0.72 |
| | | | Median [Q1, Q3] | 2.14 [1.59, 3.37] | 2.07 [1.86, 2.88] | 1.00 |

1. FAS から心房細動症例を除外した集団

1.1. トロポニン I

| | | | | | | |
|---------------------------|------|---------------------------|---------------------|----------------------|-------------|------|
| | | Min, Max | 0.41, 5.03 | 0.47, 4.89 | | |
| | 12 週 | n | 39 | 43 | | |
| | | Mean ±SD | 2.55 ±1.33 | 2.43 ±1.09 | 0.64 | |
| | | Median [Q1, Q3] | 2.26 [1.53, 3.37] | 2.24 [1.63, 3.09] | 1.00 | |
| | | Min, Max | 0.69, 5.69 | 0.10, 5.29 | | |
| | 24 週 | n | 38 | 42 | | |
| | | Mean ±SD | 2.51 ±1.17 | 2.30 ±1.10 | 0.41 | |
| | | Median [Q1, Q3] | 2.22 [1.74, 3.21] | 2.03 [1.50, 3.05] | 0.48 | |
| | | Min, Max | 0.59, 4.98 | 0.41, 5.93 | | |
| 変化量 | 12 週 | n | 39 | 43 | | |
| | | Mean ±SD | 0.16 ±0.66 | 0.07 ±0.58 | 0.51 | |
| | | Median [Q1, Q3] | 0.06 [-0.12, 0.24] | 0.02 [-0.21, 0.19] | 0.22 | |
| | | Min, Max | -0.82, 3.73 | -0.60, 3.27 | | |
| | | One-sample t-test | 0.14 | 0.45 | | |
| | | Wilcoxon signed-rank test | 0.11 | 0.99 | | |
| | 24 週 | n | 38 | 42 | | |
| | | Mean ±SD | 0.15 ±0.34 | -0.03 ±0.51 | 0.08 | |
| | | Median [Q1, Q3] | 0.18 [-0.05, 0.36] | -0.10 [-0.26, 0.17] | 0.003 | |
| | | Min, Max | -0.68, 0.82 | -0.77, 2.38 | | |
| | | One-sample t-test | 0.011 | 0.71 | | |
| | | Wilcoxon signed-rank test | 0.005 | 0.17 | | |
| | 変化率 | 12 週 | n | 39 | 43 | |
| | | | Mean ±SD | 11.85 ±39.33 | 2.89 ±31.08 | 0.25 |
| Median [Q1, Q3] | | | 2.00 [-4.79, 9.10] | 1.09 [-7.81, 7.22] | 0.32 | |
| Min, Max | | | -42.69, 190.10 | -82.04, 162.43 | | |
| One-sample t-test | | | 0.07 | 0.55 | | |
| Wilcoxon signed-rank test | | | 0.16 | 0.81 | | |
| 24 週 | | n | 38 | 42 | | |
| | | Mean ±SD | 12.16 ±24.17 | -1.52 ±21.16 | 0.009 | |
| | | Median [Q1, Q3] | 7.63 [-1.11, 15.54] | -4.70 [-12.96, 8.85] | 0.004 | |
| | | Min, Max | -29.32, 85.76 | -44.54, 67.27 | | |
| | | One-sample t-test | 0.004 | 0.64 | | |
| | | Wilcoxon signed-rank test | 0.004 | 0.26 | | |

1. FAS から心房細動症例を除外した集団
 1.2. 心房細動症例を除外した部分集団での FMD

1.2. FMD

表 1.2.1. [FAS] FMD

| 変数 | | 観察 ポイント | 統計量 | トピロキソスタット群 | アロプリノール群 | 群間比較 P 値 |
|---------|-----|------------|---------------------------|--------------------|---------------------|-------------|
| FMD (%) | 測定値 | 0 週 | n | 32 | 33 | |
| | | | Mean ± SD | 4.88 ± 2.38 | 4.73 ± 2.29 | 0.80 |
| | | | Median [Q1, Q3] | 4.65 [3.00, 6.00] | 4.70 [3.40, 5.70] | 0.94 |
| | | | Min, Max | 1.70, 11.50 | 1.10, 10.80 | |
| | | 24 週 | n | 31 | 31 | |
| | | | Mean ± SD | 4.98 ± 2.45 | 4.53 ± 1.71 | 0.40 |
| | | | Median [Q1, Q3] | 4.00 [3.50, 6.10] | 4.20 [3.40, 5.60] | 0.69 |
| | | | Min, Max | 1.50, 12.60 | 1.60, 9.20 | |
| | 変化量 | 24 週 | n | 30 | 30 | |
| | | | Mean ± SD | -0.01 ± 1.40 | -0.22 ± 1.53 | 0.59 |
| | | | Median [Q1, Q3] | 0.10 [-0.80, 1.00] | -0.10 [-0.90, 0.60] | 0.52 |
| | | | Min, Max | -4.30, 3.00 | -5.60, 2.40 | |
| | | | One-sample t-test | 0.97 | 0.45 | |
| | | | Wilcoxon signed-rank test | 0.83 | 0.53 | |

表 1.2.2. [FAS] FMD の変化量と EndoPAT の変化量の相関

| 変数 1 | 変数 2 | n | Pearson | | Spearman | |
|-----------------|-----------------------------|----|--------------------|------|-------------------|-------|
| | | | 相関係数 (95%CI) | P 値 | 相関係数 (95%CI) | P 値 |
| FMD (%) 24 週変化量 | EndoPAT (RHI 指数) 24 週変化量 | 60 | 0.25 (-0.01, 0.47) | 0.06 | 0.26 (0.00, 0.48) | 0.048 |

1. FAS から心房細動症例を除外した集団

1.3. ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

1.3. ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

表 1.3.1. [FAS] ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| 変数 | | 観察 ポイント | 統計量 | トピロキシスタット群 | アロプリノール群 | 群間比較 P 値 |
|----------------------|------|-----------------|---------------------------|--------------------|---------------------|-------------|
| FMD (%) | 測定値 | 0 週 | n | 12 | 13 | |
| | | | Mean ± SD | 5.28 ± 3.09 | 5.40 ± 2.31 | 0.91 |
| | | | Median [Q1, Q3] | 4.30 [2.90, 7.55] | 4.70 [4.20, 6.70] | 0.61 |
| | | | Min, Max | 1.90, 11.50 | 1.10, 9.80 | |
| | | 24 週 | n | 11 | 13 | |
| | | | Mean ± SD | 6.06 ± 3.08 | 5.09 ± 1.91 | 0.36 |
| | | | Median [Q1, Q3] | 5.90 [4.00, 8.70] | 4.20 [3.60, 6.00] | 0.42 |
| | | | Min, Max | 1.50, 12.60 | 3.40, 9.20 | |
| | 変化量 | 24 週 | n | 10 | 12 | |
| | | | Mean ± SD | 0.47 ± 1.22 | 0.14 ± 1.41 | 0.57 |
| | | | Median [Q1, Q3] | 0.65 [-0.40, 1.10] | -0.10 [-0.95, 1.30] | 0.47 |
| | | | Min, Max | -1.30, 3.00 | -1.60, 2.40 | |
| | | | One-sample t-test | 0.25 | 0.73 | |
| | | | Wilcoxon signed-rank test | 0.31 | 0.85 | |
| 8-OHdG (ng/mg・Cr) | 測定値 | 0 週 | n | 14 | 16 | |
| | | | Mean ± SD | 8.4 ± 3.7 | 7.5 ± 3.0 | 0.43 |
| | | | Median [Q1, Q3] | 7.6 [5.4, 11.2] | 6.7 [5.8, 8.5] | 0.56 |
| | | | Min, Max | 3.4, 15.7 | 2.8, 13.5 | |
| | | 12 週 | n | 13 | 16 | |
| | | | Mean ± SD | 9.0 ± 3.8 | 8.2 ± 2.5 | 0.50 |
| | | | Median [Q1, Q3] | 8.0 [7.1, 10.3] | 8.6 [5.8, 10.6] | 0.88 |
| | | | Min, Max | 3.6, 16.8 | 4.3, 11.5 | |
| | | 24 週 | n | 12 | 15 | |
| | | | Mean ± SD | 8.7 ± 4.3 | 10.8 ± 1.5 | 0.10 |
| | | | Median [Q1, Q3] | 8.5 [5.9, 9.6] | 11.1 [10.0, 12.1] | 0.016 |
| | | | Min, Max | 4.1, 20.1 | 7.3, 12.7 | |
| | 変化量 | 12 週 | n | 13 | 16 | |
| | | | Mean ± SD | 0.4 ± 2.7 | 0.8 ± 3.2 | 0.78 |
| | | | Median [Q1, Q3] | 1.7 [-1.0, 2.2] | 0.8 [-1.3, 3.7] | 0.71 |
| | | | Min, Max | -5.8, 3.6 | -5.5, 5.4 | |
| | | | One-sample t-test | 0.56 | 0.35 | |
| | | | Wilcoxon signed-rank test | 0.37 | 0.36 | |
| | | 24 週 | n | 12 | 15 | |
| | | | Mean ± SD | 0.2 ± 4.1 | 3.2 ± 3.3 | 0.047 |
| | | | Median [Q1, Q3] | 1.0 [-1.5, 2.5] | 3.4 [1.2, 6.0] | 0.05 |
| | | | Min, Max | -9.9, 6.2 | -2.3, 8.3 | |
| | | | One-sample t-test | 0.85 | 0.002 | |
| | | | Wilcoxon signed-rank test | 0.56 | 0.003 | |
| 変化率 | 12 週 | n | 13 | 16 | | |
| | | Mean ± SD | 14.4 ± 38.1 | 23.1 ± 49.7 | 0.60 | |
| | | Median [Q1, Q3] | 20.0 [-12.0, 31.5] | 12.5 [-18.6, 72.1] | 0.78 | |
| | | Min, Max | -61.7, 81.8 | -43.0, 94.7 | | |
| One-sample t-test | 0.20 | 0.08 | | | | |

1. FAS から心房細動症例を除外した集団

1.3. ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| | | | | | | |
|--|-----|------|---------------------------|-------------------------|----------------------|-------|
| | | | Wilcoxon signed-rank test | 0.15 | 0.16 | |
| | | 24 週 | n | 12 | 15 | |
| | | | Mean ±SD | 17.5 ±60.8 | 68.4 ±84.5 | 0.09 |
| | | | Median [Q1, Q3] | 13.4 [-14.6, 28.8] | 55.9 [16.2, 89.6] | 0.023 |
| | | | Min, Max | -70.7, 182.4 | -18.0, 296.4 | |
| | | | One-sample t-test | 0.34 | 0.007 | |
| | | | Wilcoxon signed-rank test | 0.34 | 0.001 | |
| XOR 活性 (pmol/h/mL plasma) | 測定値 | 0 週 | n | 14 | 16 | |
| | | | Mean ±SD | 50.3 ±43.6 | 47.4 ±51.6 | 0.87 |
| | | | Median [Q1, Q3] | 36.4 [22.7, 51.3] | 30.9 [16.7, 53.3] | 0.37 |
| | | | Min, Max | 13.6, 170.0 | 6.7, 201.0 | |
| | | 24 週 | n | 12 | 15 | |
| | | | Mean ±SD | 38.5 ±68.4 | 31.4 ±61.0 | 0.78 |
| | | | Median [Q1, Q3] | 14.9 [9.2, 30.3] | 9.2 [6.7, 27.8] | 0.26 |
| | | | Min, Max | 6.7, 250.0 | 6.7, 246.0 | |
| | 変化量 | 24 週 | n | 12 | 15 | |
| | | | Mean ±SD | -15.1 ±71.8 | -18.8 ±60.8 | 0.89 |
| | | | Median [Q1, Q3] | -18.5 [-33.9, -5.1] | -19.2 [-28.8, -4.5] | 0.88 |
| | | | Min, Max | -110.2, 182.2 | -174.1, 138.0 | |
| | | | One-sample t-test | 0.48 | 0.25 | |
| | | | Wilcoxon signed-rank test | 0.034 | 0.010 | |
| | 変化率 | 24 週 | n | 12 | 15 | |
| | | | Mean ±SD | -28.8 ±96.9 | -43.2 ±53.7 | 0.63 |
| | | | Median [Q1, Q3] | -61.4 [-71.2, -29.9] | -63.1 [-73.5, -32.3] | 0.90 |
| | | | Min, Max | -84.0, 268.7 | -86.6, 127.8 | |
| One-sample t-test | | | 0.32 | 0.008 | | |
| Wilcoxon signed-rank test | | | 0.034 | 0.013 | | |
| 対数変換 XOR 活性 (ln (pmol/h/mL plasma)) | 測定値 | 0 週 | n | 14 | 16 | |
| | | | Mean ±SD | 3.7 ±0.7 | 3.4 ±1.0 | 0.42 |
| | | | Median [Q1, Q3] | 3.6 [3.1, 3.9] | 3.4 [2.8, 3.9] | 0.37 |
| | | | Min, Max | 2.6, 5.1 | 1.9, 5.3 | |
| | | 24 週 | n | 12 | 15 | |
| | | | Mean ±SD | 2.9 ±1.1 | 2.7 ±1.1 | 0.53 |
| | | | Median [Q1, Q3] | 2.7 [2.2, 3.4] | 2.2 [1.9, 3.3] | 0.26 |
| | | | Min, Max | 1.9, 5.5 | 1.9, 5.5 | |
| | 変化量 | 24 週 | n | 12 | 15 | |
| | | | Mean ±SD | -0.8 ±0.9 | -0.8 ±0.7 | 0.83 |
| | | | Median [Q1, Q3] | -1.0 [-1.3, -0.4] | -1.0 [-1.3, -0.4] | 0.90 |
| | | | Min, Max | -1.8, 1.3 | -2.0, 0.8 | |
| | | | One-sample t-test | 0.009 | <0.001 | |
| | | | Wilcoxon signed-rank test | 0.016 | 0.001 | |
| | 変化率 | 24 週 | n | 12 | 15 | |
| | | | Mean ±SD | -21.3 ±21.2 | -24.4 ±18.3 | 0.69 |
| | | | Median [Q1, Q3] | -25.6 [-34.7, -11.7] | -31.5 [-35.7, -9.3] | 0.61 |
| | | | Min, Max | -44.1, 30.9 | -46.5, 17.6 | |
| One-sample t-test | | | 0.005 | <0.001 | | |
| Wilcoxon signed-rank test | | | 0.012 | <0.001 | | |

1. FAS から心房細動症例を除外した集団

1.3. ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| | | | | | | |
|---------------------------|-----|------|---------------------------|-------------------|-------------------|------|
| 血中尿酸値 (mg/dL) | 測定値 | 0 週 | n | 14 | 16 | |
| | | | Mean ± SD | 8.8 ± 1.6 | 8.6 ± 1.5 | 0.75 |
| | | | Median [Q1, Q3] | 8.7 [7.2, 10.2] | 8.5 [7.6, 9.2] | 0.85 |
| | | | Min, Max | 6.9, 11.9 | 6.7, 11.6 | |
| | | 12 週 | n | 13 | 16 | |
| | | | Mean ± SD | 6.0 ± 1.3 | 6.0 ± 0.9 | 0.95 |
| | | | Median [Q1, Q3] | 6.1 [5.3, 6.8] | 6.0 [5.5, 6.6] | 1.00 |
| | | | Min, Max | 3.9, 8.7 | 4.5, 7.4 | |
| | | 24 週 | n | 12 | 15 | |
| | | | Mean ± SD | 6.2 ± 1.3 | 6.0 ± 0.9 | 0.62 |
| | | | Median [Q1, Q3] | 6.6 [4.8, 7.4] | 6.0 [5.2, 6.5] | 0.73 |
| | | | Min, Max | 4.5, 7.8 | 4.7, 7.9 | |
| | 変化量 | 12 週 | n | 13 | 16 | |
| | | | Mean ± SD | -2.6 ± 1.2 | -2.6 ± 1.3 | 0.95 |
| | | | Median [Q1, Q3] | -2.2 [-3.3, -1.7] | -2.3 [-3.5, -1.8] | 0.86 |
| | | | Min, Max | -5.3, -1.2 | -5.0, -1.0 | |
| | | | One-sample t-test | <0.001 | <0.001 | |
| | | | Wilcoxon signed-rank test | <0.001 | <0.001 | |
| | | 24 週 | n | 12 | 15 | |
| | | | Mean ± SD | -2.2 ± 1.3 | -2.4 ± 1.3 | 0.58 |
| Median [Q1, Q3] | | | -2.6 [-2.8, -1.3] | -2.2 [-3.1, -1.7] | 0.86 | |
| Min, Max | | | -4.6, 0.0 | -5.7, -0.4 | | |
| One-sample t-test | | | <0.001 | <0.001 | | |
| Wilcoxon signed-rank test | | | <0.001 | <0.001 | | |

表 1.3.2. [FAS] ベースライン時 EF45%未満の部分集団での FMD の変化量と EndoPAT の変化量の相関

| 変数 1 | 変数 2 | n | Pearson | | Spearman | |
|-----------------|-----------------------------|----|--------------------|------|--------------------|------|
| | | | 相関係数 (95%CI) | P 値 | 相関係数 (95%CI) | P 値 |
| FMD (%) 24 週変化量 | EndoPAT (RHI 指数) 24 週変化量 | 22 | 0.26 (-0.19, 0.61) | 0.25 | 0.36 (-0.08, 0.67) | 0.10 |

1. FAS から心房細動症例を除外した集団

1.4. ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

1.4. ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

表 1.4.1. [FAS] ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| 変数 | | 観察 ポイント | 統計量 | トピロキソスタット群 | アロプリノール群 | 群間比較 P 値 |
|----------------------|-------|-----------------|---------------------------|--------------------|---------------------|-------------|
| FMD (%) | 測定値 | 0 週 | n | 17 | 14 | |
| | | | Mean ± SD | 4.54 ± 2.00 | 4.53 ± 2.41 | 0.99 |
| | | | Median [Q1, Q3] | 4.60 [3.30, 5.50] | 4.75 [2.40, 5.50] | 1.00 |
| | | | Min, Max | 1.70, 9.20 | 1.30, 10.80 | |
| | | 24 週 | n | 17 | 12 | |
| | | | Mean ± SD | 4.39 ± 1.96 | 4.10 ± 1.61 | 0.67 |
| | | | Median [Q1, Q3] | 3.70 [3.00, 5.60] | 4.15 [2.85, 5.40] | 0.96 |
| | | | Min, Max | 1.70, 9.80 | 1.60, 6.20 | |
| | 変化量 | 24 週 | n | 17 | 12 | |
| | | | Mean ± SD | -0.14 ± 1.54 | -0.89 ± 1.77 | 0.24 |
| | | | Median [Q1, Q3] | 0.30 [-0.90, 1.00] | -0.60 [-1.35, 0.05] | 0.22 |
| | | | Min, Max | -4.30, 2.10 | -5.60, 1.30 | |
| | | | One-sample t-test | 0.71 | 0.11 | |
| | | | Wilcoxon signed-rank test | 0.97 | 0.11 | |
| 8-OHdG (ng/mg・Cr) | 測定値 | 0 週 | n | 22 | 23 | |
| | | | Mean ± SD | 7.6 ± 2.5 | 7.2 ± 3.8 | 0.73 |
| | | | Median [Q1, Q3] | 7.3 [5.6, 9.4] | 6.1 [4.8, 9.2] | 0.33 |
| | | | Min, Max | 4.3, 13.0 | 2.6, 19.9 | |
| | | 12 週 | n | 22 | 21 | |
| | | | Mean ± SD | 9.1 ± 3.8 | 11.9 ± 8.1 | 0.15 |
| | | | Median [Q1, Q3] | 8.4 [6.5, 11.1] | 9.2 [7.0, 14.3] | 0.32 |
| | | | Min, Max | 4.1, 19.4 | 4.9, 37.9 | |
| | | 24 週 | n | 22 | 21 | |
| | | | Mean ± SD | 9.2 ± 4.7 | 11.4 ± 5.7 | 0.17 |
| | | | Median [Q1, Q3] | 8.4 [5.6, 10.5] | 10.0 [7.3, 14.7] | 0.11 |
| | | | Min, Max | 4.6, 24.9 | 3.6, 25.6 | |
| | 変化量 | 12 週 | n | 22 | 21 | |
| | | | Mean ± SD | 1.5 ± 3.4 | 4.3 ± 6.0 | 0.06 |
| | | | Median [Q1, Q3] | 1.0 [-0.4, 3.2] | 2.6 [0.5, 5.6] | 0.044 |
| | | | Min, Max | -5.7, 9.6 | -1.1, 27.3 | |
| | | | One-sample t-test | 0.048 | 0.003 | |
| | | | Wilcoxon signed-rank test | 0.039 | <0.001 | |
| | | 24 週 | n | 22 | 21 | |
| | | | Mean ± SD | 1.6 ± 3.7 | 3.9 ± 3.3 | 0.037 |
| | | | Median [Q1, Q3] | 1.0 [-0.4, 3.9] | 3.8 [1.8, 5.9] | 0.022 |
| | | | Min, Max | -3.9, 11.9 | -1.7, 10.6 | |
| | | | One-sample t-test | 0.0495 | <0.001 | |
| | | | Wilcoxon signed-rank test | 0.08 | <0.001 | |
| 変化率 | 12 週 | n | 22 | 21 | | |
| | | Mean ± SD | 26.0 ± 52.7 | 59.2 ± 66.4 | 0.08 | |
| | | Median [Q1, Q3] | 17.0 [-5.9, 38.1] | 47.4 [9.1, 79.3] | 0.042 | |
| | | Min, Max | -46.7, 158.1 | -13.9, 257.5 | | |
| One-sample t-test | 0.031 | <0.001 | | | | |

1. FAS から心房細動症例を除外した集団

1.4. ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| | | | | | | |
|--|--------|---------------------------|---------------------------|----------------------|----------------------|-------|
| | | | Wilcoxon signed-rank test | 0.036 | <0.001 | |
| | | 24 週 | n | 22 | 21 | |
| | | | Mean ±SD | 25.0 ±50.8 | 60.4 ±56.4 | 0.036 |
| | | | Median [Q1, Q3] | 11.6 [-5.5, 39.8] | 41.9 [29.0, 84.4] | 0.016 |
| | | | Min, Max | -32.0, 151.2 | -25.0, 194.7 | |
| | | | One-sample t-test | 0.032 | <0.001 | |
| | | | Wilcoxon signed-rank test | 0.06 | <0.001 | |
| XOR 活性 (pmol/h/mL plasma) | 測定値 | 0 週 | n | 22 | 23 | |
| | | | Mean ±SD | 51.2 ±36.0 | 53.5 ±76.4 | 0.90 |
| | | | Median [Q1, Q3] | 40.5 [29.3, 54.8] | 23.8 [17.3, 49.9] | 0.047 |
| | | | Min, Max | 16.3, 152.0 | 7.5, 329.0 | |
| | | 24 週 | n | 22 | 21 | |
| | | | Mean ±SD | 21.8 ±19.1 | 23.1 ±31.4 | 0.87 |
| | 変化量 | 24 週 | n | 22 | 21 | |
| | | | Mean ±SD | -29.4 ±31.5 | -33.4 ±54.6 | 0.77 |
| | | | Median [Q1, Q3] | -19.8 [-41.5, -13.2] | -12.6 [-30.5, -8.2] | 0.36 |
| | | | Min, Max | -124.6, 14.6 | -241.9, 7.6 | |
| | | | One-sample t-test | <0.001 | 0.011 | |
| | | Wilcoxon signed-rank test | <0.001 | <0.001 | | |
| | 変化率 | 24 週 | n | 22 | 21 | |
| | | | Mean ±SD | -53.3 ±32.6 | -45.9 ±34.3 | 0.47 |
| | | | Median [Q1, Q3] | -58.2 [-80.0, -48.1] | -51.5 [-64.9, -39.3] | 0.19 |
| Min, Max | | | -92.8, 28.6 | -90.9, 81.4 | | |
| One-sample t-test | | | <0.001 | <0.001 | | |
| Wilcoxon signed-rank test | <0.001 | <0.001 | | | | |
| 対数変換 XOR 活性 (ln (pmol/h/mL plasma)) | 測定値 | 0 週 | n | 22 | 23 | |
| | | | Mean ±SD | 3.8 ±0.6 | 3.4 ±1.0 | 0.17 |
| | | | Median [Q1, Q3] | 3.7 [3.4, 4.0] | 3.2 [2.9, 3.9] | 0.047 |
| | | | Min, Max | 2.8, 5.0 | 2.0, 5.8 | |
| | | 24 週 | n | 22 | 21 | |
| | | | Mean ±SD | 2.8 ±0.8 | 2.7 ±0.9 | 0.76 |
| | 変化量 | 24 週 | n | 22 | 21 | |
| | | | Mean ±SD | -1.0 ±0.7 | -0.8 ±0.6 | 0.25 |
| | | | Median [Q1, Q3] | -0.9 [-1.6, -0.7] | -0.7 [-1.0, -0.5] | 0.19 |
| | | | Min, Max | -2.6, 0.3 | -2.4, 0.6 | |
| | | | One-sample t-test | <0.001 | <0.001 | |
| | | Wilcoxon signed-rank test | <0.001 | <0.001 | | |
| | 変化率 | 24 週 | n | 22 | 21 | |
| | | | Mean ±SD | -26.3 ±18.0 | -20.9 ±15.4 | 0.30 |
| | | | Median [Q1, Q3] | -24.8 [-41.9, -15.7] | -22.2 [-24.2, -16.9] | 0.34 |
| Min, Max | | | -58.1, 6.4 | -55.8, 26.6 | | |
| One-sample t-test | <0.001 | <0.001 | | | | |

1. FAS から心房細動症例を除外した集団

1.4. ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| 血中尿酸値 (mg/dL) | 測定値 | 0 週 | Wilcoxon signed-rank test | <0.001 | <0.001 | | |
|------------------|-----|------|---------------------------|-------------------|-------------------|-------------------|------|
| | | | n | 21 | 23 | | |
| | | | Mean ± SD | 8.2 ± 1.5 | 8.2 ± 1.7 | 0.91 | |
| | | | Median [Q1, Q3] | 8.1 [7.2, 9.2] | 7.9 [7.0, 9.1] | 0.79 | |
| | | | Min, Max | 5.7, 11.6 | 6.0, 12.4 | | |
| | | 12 週 | n | 22 | 23 | | |
| | | | Mean ± SD | 5.4 ± 0.9 | 5.7 ± 1.3 | 0.42 | |
| | | | Median [Q1, Q3] | 5.5 [5.0, 5.8] | 5.7 [4.9, 6.0] | 0.52 | |
| | | | Min, Max | 3.8, 7.6 | 3.6, 9.0 | | |
| | | 24 週 | n | 22 | 22 | | |
| | | | Mean ± SD | 5.4 ± 1.1 | 5.9 ± 1.5 | 0.19 | |
| | | | Median [Q1, Q3] | 5.5 [4.8, 6.0] | 5.9 [5.0, 6.4] | 0.26 | |
| | | | Min, Max | 3.6, 7.4 | 3.1, 9.7 | | |
| | 変化量 | 12 週 | n | 21 | 23 | | |
| | | | | Mean ± SD | -2.8 ± 1.3 | -2.5 ± 1.6 | 0.44 |
| | | | | Median [Q1, Q3] | -2.4 [-3.8, -2.0] | -2.3 [-3.2, -1.6] | 0.43 |
| | | | | Min, Max | -5.5, -0.9 | -6.2, 0.7 | |
| | | | | One-sample t-test | <0.001 | <0.001 | |
| | | | Wilcoxon signed-rank test | <0.001 | <0.001 | | |
| | | | 24 週 | n | 21 | 22 | |
| | | | | Mean ± SD | -2.8 ± 1.7 | -2.3 ± 1.4 | 0.25 |
| | | | | Median [Q1, Q3] | -2.3 [-3.4, -1.8] | -1.8 [-3.2, -1.2] | 0.13 |
| | | | | Min, Max | -6.6, 0.6 | -5.7, -0.1 | |
| | | | | One-sample t-test | <0.001 | <0.001 | |
| | | | Wilcoxon signed-rank test | <0.001 | <0.001 | | |

表 1.4.2. [FAS] ベースライン時 EF50%以上の部分集団での FMD の変化量と EndoPAT の変化量の相関

| 変数 1 | 変数 2 | n | Pearson | | Spearman | |
|-----------------|-----------------------------|----|--------------------|------|--------------------|------|
| | | | 相関係数 (95%CI) | P 値 | 相関係数 (95%CI) | P 値 |
| FMD (%) 24 週変化量 | EndoPAT (RHI 指数) 24 週変化量 | 29 | 0.27 (-0.11, 0.58) | 0.15 | 0.25 (-0.14, 0.56) | 0.20 |

2. PPS から心房細動症例を除外した集団

2.1. トロポニン I

2. PPS から心房細動除症例を除外した集団

除外した心房細動症例の定義は、心不全の原疾患もしくは合併症に心房細動があり、かつ登録時の心電図検査でも心房細動の所見があった症例、とした。

2.1. トロポニン I

表 2.1.1. [PPS] トロポニン I

| 変数 | 観察 ポイント | 統計量 | トピロキソスタット群 | アロプリノール群 | 群間比較 P 値 | |
|------------------------------|------------|---------------------------|---------------------------|--------------------|-------------------|-------|
| hs トロポニン I (pg/mL) | 測定値 | 0 週 | n | 37 | 43 | |
| | | | Mean ± SD | 25.7 ± 39.7 | 18.1 ± 24.2 | 0.30 |
| | | | Median [Q1, Q3] | 8.4 [4.9, 24.9] | 7.9 [5.9, 19.5] | 0.98 |
| | | | Min, Max | 1.5, 152.7 | 1.6, 132.3 | |
| | | 12 週 | n | 37 | 41 | |
| | | | Mean ± SD | 35.0 ± 60.0 | 19.9 ± 33.5 | 0.17 |
| | | | Median [Q1, Q3] | 9.6 [4.6, 29.2] | 8.9 [5.1, 21.0] | 0.79 |
| | | | Min, Max | 2.0, 294.8 | 1.1, 197.9 | |
| | | 24 週 | n | 36 | 40 | |
| | | | Mean ± SD | 27.1 ± 39.0 | 23.4 ± 58.9 | 0.74 |
| | | | Median [Q1, Q3] | 9.2 [5.4, 25.1] | 7.7 [4.5, 21.2] | 0.47 |
| | | | Min, Max | 1.8, 145.0 | 1.5, 375.3 | |
| | 変化量 | 12 週 | n | 37 | 41 | |
| | | | Mean ± SD | 9.4 ± 47.7 | 4.8 ± 30.4 | 0.61 |
| | | | Median [Q1, Q3] | 0.3 [-1.0, 3.3] | 0.1 [-1.5, 1.1] | 0.39 |
| | | | Min, Max | -17.9, 287.7 | -18.9, 190.4 | |
| | | | One-sample t-test | 0.24 | 0.32 | |
| | | | Wilcoxon signed-rank test | 0.20 | 0.82 | |
| | | 24 週 | n | 36 | 40 | |
| | | | Mean ± SD | 1.7 ± 16.0 | 7.5 ± 54.4 | 0.54 |
| | | | Median [Q1, Q3] | 1.2 [-0.7, 3.5] | -0.5 [-2.8, 0.9] | 0.018 |
| | | | Min, Max | -68.9, 42.3 | -18.4, 340.7 | |
| | | | One-sample t-test | 0.52 | 0.39 | |
| | | | Wilcoxon signed-rank test | 0.045 | 0.19 | |
| 変化率 | 12 週 | n | 37 | 41 | | |
| | | Mean ± SD | 119.6 ± 665.2 | 66.1 ± 397.3 | 0.66 | |
| | | Median [Q1, Q3] | 6.4 [-8.8, 26.7] | 1.9 [-18.5, 20.5] | 0.29 | |
| | | Min, Max | -55.9, 4052.1 | -44.9, 2538.7 | | |
| | | One-sample t-test | 0.28 | 0.29 | | |
| | | Wilcoxon signed-rank test | 0.08 | 0.62 | | |
| | 24 週 | n | 36 | 40 | | |
| | | Mean ± SD | 19.8 ± 36.5 | 22.3 ± 160.1 | 0.93 | |
| | | Median [Q1, Q3] | 20.1 [-7.1, 42.7] | -8.7 [-24.2, 19.3] | 0.008 | |
| | | Min, Max | -49.4, 126.5 | -53.6, 984.7 | | |
| | | One-sample t-test | 0.003 | 0.38 | | |
| | | Wilcoxon signed-rank test | 0.002 | 0.47 | | |
| 対数変換 hs トロポニン I (ln (pg/mL)) | 測定値 | 0 週 | n | 37 | 43 | |
| | | | Mean ± SD | 2.42 ± 1.23 | 2.37 ± 0.99 | 0.83 |
| | | | Median [Q1, Q3] | 2.13 [1.59, 3.21] | 2.07 [1.77, 2.97] | 0.98 |

2. PPS から心房細動症例を除外した集団

2.1. トロポニン I

| | | | | | |
|------|-----------------|---------------------------|---------------------|-----------------------|-------|
| | | Min, Max | 0.41, 5.03 | 0.47, 4.89 | |
| 12 週 | n | | 37 | 41 | |
| | Mean ±SD | | 2.58 ±1.33 | 2.36 ±1.06 | 0.42 |
| | Median [Q1, Q3] | | 2.26 [1.53, 3.37] | 2.19 [1.63, 3.04] | 0.79 |
| | Min, Max | | 0.69, 5.69 | 0.10, 5.29 | |
| 24 週 | n | | 36 | 40 | |
| | Mean ±SD | | 2.52 ±1.20 | 2.30 ±1.12 | 0.41 |
| | Median [Q1, Q3] | | 2.22 [1.67, 3.22] | 2.03 [1.49, 3.05] | 0.47 |
| | Min, Max | | 0.59, 4.98 | 0.41, 5.93 | |
| 変化量 | 12 週 | n | 37 | 41 | |
| | | Mean ±SD | 0.16 ±0.67 | 0.08 ±0.59 | 0.58 |
| | | Median [Q1, Q3] | 0.06 [-0.09, 0.24] | 0.02 [-0.20, 0.19] | 0.29 |
| | | Min, Max | -0.82, 3.73 | -0.60, 3.27 | |
| | | One-sample t-test | 0.17 | 0.41 | |
| | | Wilcoxon signed-rank test | 0.14 | 0.88 | |
| | 24 週 | n | 36 | 40 | |
| | | Mean ±SD | 0.13 ±0.33 | -0.02 ±0.53 | 0.13 |
| | | Median [Q1, Q3] | 0.18 [-0.07, 0.36] | -0.09 [-0.28, 0.18] | 0.008 |
| | | Min, Max | -0.68, 0.82 | -0.77, 2.38 | |
| | | One-sample t-test | 0.020 | 0.77 | |
| | | Wilcoxon signed-rank test | 0.008 | 0.24 | |
| 変化率 | 12 週 | n | 37 | 41 | |
| | | Mean ±SD | 12.32 ±40.17 | 3.11 ±31.80 | 0.26 |
| | | Median [Q1, Q3] | 2.00 [-3.98, 8.68] | 1.09 [-7.81, 7.22] | 0.34 |
| | | Min, Max | -42.69, 190.10 | -82.04, 162.43 | |
| | | One-sample t-test | 0.07 | 0.53 | |
| | | Wilcoxon signed-rank test | 0.15 | 0.76 | |
| | 24 週 | n | 36 | 40 | |
| | | Mean ±SD | 10.48 ±21.33 | -1.29 ±21.67 | 0.020 |
| | | Median [Q1, Q3] | 7.63 [-1.53, 15.22] | -4.26 [-13.35, 11.23] | 0.011 |
| | | Min, Max | -29.32, 66.80 | -44.54, 67.27 | |
| | | One-sample t-test | 0.006 | 0.71 | |
| | | Wilcoxon signed-rank test | 0.006 | 0.33 | |

2. PPS から心房細動症例を除外した集団
 2.2. 心房細動症例を除外した部分集団での FMD

2.2. FMD

表 2.2.1. [PPS] FMD

| 変数 | | 観察 ポイント | 統計量 | トピロキソスタット群 | アロプリノール群 | 群間比較 P 値 |
|---------|-----|------------|---------------------------|--------------------|---------------------|-------------|
| FMD (%) | 測定値 | 0 週 | n | 29 | 31 | |
| | | | Mean ± SD | 4.84 ± 2.38 | 4.86 ± 2.27 | 0.97 |
| | | | Median [Q1, Q3] | 4.60 [3.10, 5.80] | 4.80 [3.40, 5.80] | 0.78 |
| | | | Min, Max | 1.70, 11.50 | 1.10, 10.80 | |
| | | 24 週 | n | 29 | 29 | |
| | | | Mean ± SD | 4.99 ± 2.51 | 4.54 ± 1.72 | 0.42 |
| | | | Median [Q1, Q3] | 4.00 [3.50, 6.10] | 4.20 [3.40, 5.30] | 0.77 |
| | | | Min, Max | 1.50, 12.60 | 1.60, 9.20 | |
| | 変化量 | 24 週 | n | 28 | 28 | |
| | | | Mean ± SD | 0.13 ± 1.18 | -0.35 ± 1.49 | 0.19 |
| | | | Median [Q1, Q3] | 0.10 [-0.70, 1.00] | -0.35 [-0.95, 0.40] | 0.22 |
| | | | Min, Max | -1.90, 3.00 | -5.60, 2.40 | |
| | | | One-sample t-test | 0.57 | 0.22 | |
| | | | Wilcoxon signed-rank test | 0.63 | 0.20 | |

表 2.2.2. [PPS] FMD の変化量と EndoPAT の変化量の相関

| 変数 1 | 変数 2 | n | Pearson | | Spearman | |
|-----------------|-----------------------------|----|--------------------|------|--------------------|------|
| | | | 相関係数 (95%CI) | P 値 | 相関係数 (95%CI) | P 値 |
| FMD (%) 24 週変化量 | EndoPAT (RHI 指数) 24 週変化量 | 56 | 0.18 (-0.09, 0.42) | 0.18 | 0.21 (-0.06, 0.45) | 0.12 |

2. PPS から心房細動症例を除外した集団
 2.3. ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

2.3. ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

表 2.3.1. [PPS] ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| 変数 | | 観察 ポイント | 統計量 | トピロキシostat群 | アロプリノール群 | 群間比較 P 値 |
|----------------------|------|-----------------|---------------------------|--------------------|---------------------|-------------|
| FMD (%) | 測定値 | 0 週 | n | 11 | 12 | |
| | | | Mean ± SD | 5.55 ± 3.07 | 5.50 ± 2.39 | 0.96 |
| | | | Median [Q1, Q3] | 5.50 [2.90, 7.60] | 5.20 [4.10, 6.75] | 0.78 |
| | | | Min, Max | 1.90, 11.50 | 1.10, 9.80 | |
| | | 24 週 | n | 11 | 12 | |
| | | | Mean ± SD | 6.06 ± 3.08 | 5.02 ± 1.98 | 0.34 |
| | | | Median [Q1, Q3] | 5.90 [4.00, 8.70] | 4.15 [3.60, 5.85] | 0.37 |
| | | | Min, Max | 1.50, 12.60 | 3.40, 9.20 | |
| | 変化量 | 24 週 | n | 10 | 11 | |
| | | | Mean ± SD | 0.47 ± 1.22 | -0.01 ± 1.37 | 0.41 |
| | | | Median [Q1, Q3] | 0.65 [-0.40, 1.10] | -0.20 [-1.00, 0.80] | 0.29 |
| | | | Min, Max | -1.30, 3.00 | -1.60, 2.40 | |
| | | | One-sample t-test | 0.25 | 0.98 | |
| | | | Wilcoxon signed-rank test | 0.31 | 0.79 | |
| 8-OHdG (ng/mg・Cr) | 測定値 | 0 週 | n | 13 | 15 | |
| | | | Mean ± SD | 8.6 ± 3.9 | 7.5 ± 3.1 | 0.43 |
| | | | Median [Q1, Q3] | 8.3 [5.4, 11.2] | 6.7 [5.7, 9.2] | 0.58 |
| | | | Min, Max | 3.4, 15.7 | 2.8, 13.5 | |
| | | 12 週 | n | 13 | 14 | |
| | | | Mean ± SD | 9.0 ± 3.8 | 8.7 ± 2.4 | 0.77 |
| | | | Median [Q1, Q3] | 8.0 [7.1, 10.3] | 8.8 [7.3, 10.9] | 0.75 |
| | | | Min, Max | 3.6, 16.8 | 4.3, 11.5 | |
| | | 24 週 | n | 12 | 14 | |
| | | | Mean ± SD | 8.7 ± 4.3 | 10.8 ± 1.6 | 0.11 |
| | | | Median [Q1, Q3] | 8.5 [5.9, 9.6] | 11.4 [10.0, 12.1] | 0.019 |
| | | | Min, Max | 4.1, 20.1 | 7.3, 12.7 | |
| | 変化量 | 12 週 | n | 13 | 14 | |
| | | | Mean ± SD | 0.4 ± 2.7 | 1.0 ± 3.3 | 0.61 |
| | | | Median [Q1, Q3] | 1.7 [-1.0, 2.2] | 2.0 [-1.2, 3.8] | 0.45 |
| | | | Min, Max | -5.8, 3.6 | -5.5, 5.4 | |
| | | | One-sample t-test | 0.56 | 0.26 | |
| | | | Wilcoxon signed-rank test | 0.37 | 0.27 | |
| | | 24 週 | n | 12 | 14 | |
| | | | Mean ± SD | 0.2 ± 4.1 | 3.2 ± 3.4 | 0.06 |
| | | | Median [Q1, Q3] | 1.0 [-1.5, 2.5] | 3.4 [1.2, 6.0] | 0.07 |
| | | | Min, Max | -9.9, 6.2 | -2.3, 8.3 | |
| | | | One-sample t-test | 0.85 | 0.004 | |
| | | | Wilcoxon signed-rank test | 0.56 | 0.005 | |
| 変化率 | 12 週 | n | 13 | 14 | | |
| | | Mean ± SD | 14.4 ± 38.1 | 29.1 ± 50.4 | 0.40 | |
| | | Median [Q1, Q3] | 20.0 [-12.0, 31.5] | 31.1 [-16.0, 73.1] | 0.45 | |
| | | Min, Max | -61.7, 81.8 | -43.0, 94.7 | | |
| One-sample t-test | 0.20 | 0.0496 | | | | |

2. PPS から心房細動症例を除外した集団

2.3. ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| | | | | | | | |
|---------------------------------|--|-----------------|---------------------------|----------------------|----------------------|----------------|------|
| | | | Wilcoxon signed-rank test | 0.15 | 0.09 | | |
| | | 24 週 | n | 12 | 14 | | |
| | | | Mean ±SD | 17.5 ±60.8 | 69.0 ±87.7 | 0.10 | |
| | | | Median [Q1, Q3] | 13.4 [-14.6, 28.8] | 53.7 [16.2, 89.6] | 0.033 | |
| | | | Min, Max | -70.7, 182.4 | -18.0, 296.4 | | |
| | | | One-sample t-test | 0.34 | 0.011 | | |
| | | | Wilcoxon signed-rank test | 0.34 | 0.002 | | |
| XOR 活性 (pmol/h/mL plasma) | 測定値 | 0 週 | n | 13 | 15 | | |
| | | | Mean ±SD | 51.1 ±45.3 | 43.4 ±50.7 | 0.68 | |
| | | | Median [Q1, Q3] | 33.5 [22.7, 51.3] | 28.3 [15.3, 41.1] | 0.29 | |
| | | | Min, Max | 13.6, 170.0 | 6.7, 201.0 | | |
| | | 24 週 | n | 12 | 14 | | |
| | | | Mean ±SD | 38.5 ±68.4 | 16.1 ±14.6 | 0.24 | |
| | | | Median [Q1, Q3] | 14.9 [9.2, 30.3] | 8.0 [6.7, 26.9] | 0.15 | |
| | | | Min, Max | 6.7, 250.0 | 6.7, 47.8 | | |
| | 変化量 | 24 週 | n | 12 | 14 | | |
| | | | Mean ±SD | -15.1 ±71.8 | -30.0 ±44.3 | 0.52 | |
| | | | Median [Q1, Q3] | -18.5 [-33.9, -5.1] | -20.1 [-28.8, -8.6] | 0.96 | |
| | | | Min, Max | -110.2, 182.2 | -174.1, 0.0 | | |
| | | 24 週 | n | 12 | 14 | | |
| | | | Mean ±SD | -28.8 ±96.9 | -55.4 ±26.3 | 0.33 | |
| | | | Median [Q1, Q3] | -61.4 [-71.2, -29.9] | -63.1 [-73.5, -40.4] | 0.70 | |
| | | | Min, Max | -84.0, 268.7 | -86.6, 0.0 | | |
| | 対数変換 XOR 活性 (ln (pmol/h/mL plasma)) | 測定値 | 0 週 | n | 13 | 15 | |
| | | | | Mean ±SD | 3.7 ±0.7 | 3.3 ±0.9 | 0.30 |
| | | | | Median [Q1, Q3] | 3.5 [3.1, 3.9] | 3.3 [2.7, 3.7] | 0.29 |
| | | | | Min, Max | 2.6, 5.1 | 1.9, 5.3 | |
| 24 週 | | | n | 12 | 14 | | |
| | | | Mean ±SD | 2.9 ±1.1 | 2.5 ±0.8 | 0.20 | |
| | | | Median [Q1, Q3] | 2.7 [2.2, 3.4] | 2.1 [1.9, 3.3] | 0.15 | |
| | | | Min, Max | 1.9, 5.5 | 1.9, 3.9 | | |
| 変化量 | 24 週 | n | 12 | 14 | | | |
| | | Mean ±SD | -0.8 ±0.9 | -1.0 ±0.6 | 0.52 | | |
| | | Median [Q1, Q3] | -1.0 [-1.3, -0.4] | -1.0 [-1.3, -0.5] | 0.70 | | |
| | | Min, Max | -1.8, 1.3 | -2.0, 0.0 | | | |
| | 24 週 | n | 12 | 14 | | | |
| | | Mean ±SD | -21.3 ±21.2 | -27.4 ±14.7 | 0.40 | | |
| | | Median [Q1, Q3] | -25.6 [-34.7, -11.7] | -32.6 [-35.7, -17.4] | 0.43 | | |
| | | Min, Max | -44.1, 30.9 | -46.5, 0.0 | | | |
| 変化率 | 24 週 | n | 12 | 14 | | | |
| | | Mean ±SD | -21.3 ±21.2 | -27.4 ±14.7 | 0.40 | | |
| | | Median [Q1, Q3] | -25.6 [-34.7, -11.7] | -32.6 [-35.7, -17.4] | 0.43 | | |
| | | Min, Max | -44.1, 30.9 | -46.5, 0.0 | | | |
| | | | One-sample t-test | 0.005 | <0.001 | | |
| | | | Wilcoxon signed-rank test | 0.012 | <0.001 | | |

2. PPS から心房細動症例を除外した集団

2.3. ベースライン時 EF45%未満の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| | | | | | | |
|---------------------------|-----|------|---------------------------|-------------------|-------------------|------|
| 血中尿酸値 (mg/dL) | 測定値 | 0 週 | n | 13 | 15 | |
| | | | Mean ±SD | 8.6 ± 1.4 | 8.5 ± 1.4 | 0.86 |
| | | | Median [Q1, Q3] | 8.4 [7.2, 10.1] | 8.5 [7.5, 8.8] | 0.89 |
| | | | Min, Max | 6.9, 10.6 | 6.7, 11.6 | |
| | | 12 週 | n | 13 | 14 | |
| | | | Mean ±SD | 6.0 ± 1.3 | 6.0 ± 1.0 | 0.98 |
| | | | Median [Q1, Q3] | 6.1 [5.3, 6.8] | 5.9 [5.3, 6.8] | 0.98 |
| | | | Min, Max | 3.9, 8.7 | 4.5, 7.4 | |
| | | 24 週 | n | 12 | 14 | |
| | | | Mean ±SD | 6.2 ± 1.3 | 6.1 ± 0.9 | 0.72 |
| | | | Median [Q1, Q3] | 6.6 [4.8, 7.4] | 6.2 [5.3, 6.5] | 0.80 |
| | | | Min, Max | 4.5, 7.8 | 4.7, 7.9 | |
| | 変化量 | 12 週 | n | 13 | 14 | |
| | | | Mean ±SD | -2.6 ± 1.2 | -2.3 ± 1.0 | 0.53 |
| | | | Median [Q1, Q3] | -2.2 [-3.3, -1.7] | -2.2 [-2.7, -1.8] | 0.77 |
| | | | Min, Max | -5.3, -1.2 | -4.4, -1.0 | |
| | | | One-sample t-test | <0.001 | <0.001 | |
| | | | Wilcoxon signed-rank test | <0.001 | <0.001 | |
| | | 24 週 | n | 12 | 14 | |
| | | | Mean ±SD | -2.2 ± 1.3 | -2.2 ± 0.9 | 0.93 |
| Median [Q1, Q3] | | | -2.6 [-2.8, -1.3] | -2.2 [-3.0, -1.7] | 0.94 | |
| Min, Max | | | -4.6, 0.0 | -3.7, -0.4 | | |
| One-sample t-test | | | <0.001 | <0.001 | | |
| Wilcoxon signed-rank test | | | <0.001 | <0.001 | | |

表 2.3.2. [PPS] ベースライン時 EF45%未満の部分集団での FMD の変化量と EndoPAT の変化量の相関

| 変数 1 | 変数 2 | n | Pearson | | Spearman | |
|-----------------|-----------------------------|----|--------------------|------|--------------------|------|
| | | | 相関係数 (95%CI) | P 値 | 相関係数 (95%CI) | P 値 |
| FMD (%) 24 週変化量 | EndoPAT (RHI 指数) 24 週変化量 | 21 | 0.20 (-0.26, 0.58) | 0.39 | 0.29 (-0.16, 0.64) | 0.20 |

2. PPS から心房細動症例を除外した集団

2.4. ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

2.4. ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

表 2.4.1. [PPS] ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| 変数 | | 観察 ポイント | 統計量 | トピロキシostat群 | アロプリノール群 | 群間比較 P 値 |
|----------------------|------|-----------------|---------------------------|--------------------|---------------------|-------------|
| FMD (%) | 測定値 | 0 週 | n | 15 | 13 | |
| | | | Mean ± SD | 4.23 ± 1.89 | 4.78 ± 2.32 | 0.50 |
| | | | Median [Q1, Q3] | 4.00 [2.30, 5.20] | 4.80 [3.40, 5.50] | 0.45 |
| | | | Min, Max | 1.70, 9.20 | 1.60, 10.80 | |
| | | 24 週 | n | 15 | 12 | |
| | | | Mean ± SD | 4.33 ± 2.04 | 4.10 ± 1.61 | 0.75 |
| | | | Median [Q1, Q3] | 3.70 [2.80, 5.60] | 4.15 [2.85, 5.40] | 0.96 |
| | | | Min, Max | 1.70, 9.80 | 1.60, 6.20 | |
| | 変化量 | 24 週 | n | 15 | 12 | |
| | | | Mean ± SD | 0.10 ± 1.19 | -0.89 ± 1.77 | 0.09 |
| | | | Median [Q1, Q3] | 0.30 [-0.90, 1.00] | -0.60 [-1.35, 0.05] | 0.16 |
| | | | Min, Max | -1.90, 2.10 | -5.60, 1.30 | |
| | | | One-sample t-test | 0.75 | 0.11 | |
| | | | Wilcoxon signed-rank test | 0.73 | 0.11 | |
| 8-OHdG (ng/mg・Cr) | 測定値 | 0 週 | n | 20 | 22 | |
| | | | Mean ± SD | 7.9 ± 2.5 | 7.5 ± 3.8 | 0.68 |
| | | | Median [Q1, Q3] | 7.6 [6.3, 9.6] | 6.5 [5.0, 9.2] | 0.26 |
| | | | Min, Max | 4.3, 13.0 | 3.3, 19.9 | |
| | | 12 週 | n | 20 | 21 | |
| | | | Mean ± SD | 9.1 ± 3.9 | 11.9 ± 8.1 | 0.18 |
| | | | Median [Q1, Q3] | 8.4 [6.5, 11.1] | 9.2 [7.0, 14.3] | 0.35 |
| | | | Min, Max | 4.1, 19.4 | 4.9, 37.9 | |
| | | 24 週 | n | 20 | 21 | |
| | | | Mean ± SD | 9.2 ± 4.9 | 11.4 ± 5.7 | 0.19 |
| | | | Median [Q1, Q3] | 8.4 [5.5, 10.7] | 10.0 [7.3, 14.7] | 0.11 |
| | | | Min, Max | 4.6, 24.9 | 3.6, 25.6 | |
| | 変化量 | 12 週 | n | 20 | 21 | |
| | | | Mean ± SD | 1.3 ± 3.3 | 4.3 ± 6.0 | 0.05 |
| | | | Median [Q1, Q3] | 1.0 [-0.5, 2.8] | 2.6 [0.5, 5.6] | 0.024 |
| | | | Min, Max | -5.7, 9.6 | -1.1, 27.3 | |
| | | | One-sample t-test | 0.10 | 0.003 | |
| | | | Wilcoxon signed-rank test | 0.10 | <0.001 | |
| | | 24 週 | n | 20 | 21 | |
| | | | Mean ± SD | 1.4 ± 3.7 | 3.9 ± 3.3 | 0.024 |
| | | | Median [Q1, Q3] | 0.7 [-1.0, 3.0] | 3.8 [1.8, 5.9] | 0.011 |
| | | | Min, Max | -3.9, 11.9 | -1.7, 10.6 | |
| | | | One-sample t-test | 0.12 | <0.001 | |
| | | | Wilcoxon signed-rank test | 0.21 | <0.001 | |
| 変化率 | 12 週 | n | 20 | 21 | | |
| | | Mean ± SD | 19.8 ± 46.1 | 59.2 ± 66.4 | 0.034 | |
| | | Median [Q1, Q3] | 14.2 [-6.9, 36.7] | 47.4 [9.1, 79.3] | 0.020 | |
| | | Min, Max | -46.7, 158.1 | -13.9, 257.5 | | |
| One-sample t-test | 0.07 | <0.001 | | | | |

2. PPS から心房細動症例を除外した集団

2.4. ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| | | | | | | | |
|--|-----|------|---------------------------|----------------------|----------------------|--------|--|
| | | | Wilcoxon signed-rank test | 0.11 | <0.001 | | |
| | | 24 週 | n | 20 | 21 | | |
| | | | Mean ±SD | 17.7 ±46.0 | 60.4 ±56.4 | 0.012 | |
| | | | Median [Q1, Q3] | 11.0 [-14.7, 34.6] | 41.9 [29.0, 84.4] | 0.004 | |
| | | | Min, Max | -32.0, 151.2 | -25.0, 194.7 | | |
| | | | One-sample t-test | 0.10 | <0.001 | | |
| | | | Wilcoxon signed-rank test | 0.18 | <0.001 | | |
| XOR 活性 (pmol/h/mL plasma) | 測定値 | 0 週 | n | 20 | 22 | | |
| | | | Mean ±SD | 53.6 ±36.9 | 54.9 ±77.8 | 0.94 | |
| | | | Median [Q1, Q3] | 40.9 [30.4, 58.2] | 24.4 [17.3, 49.9] | 0.045 | |
| | | | Min, Max | 16.3, 152.0 | 7.5, 329.0 | | |
| | | 24 週 | n | 20 | 21 | | |
| | | | Mean ±SD | 23.1 ±19.6 | 23.1 ±31.4 | 1.00 | |
| | 変化量 | 24 週 | n | 20 | 21 | | |
| | | | Mean ±SD | -30.5 ±32.8 | -33.4 ±54.6 | 0.84 | |
| | | | Median [Q1, Q3] | -19.8 [-42.9, -14.6] | -12.6 [-30.5, -8.2] | 0.33 | |
| | | | Min, Max | -124.6, 14.6 | -241.9, 7.6 | | |
| | | 24 週 | One-sample t-test | <0.001 | 0.011 | | |
| | | | Wilcoxon signed-rank test | <0.001 | <0.001 | | |
| | 変化率 | 24 週 | n | 20 | 21 | | |
| | | | Mean ±SD | -52.2 ±33.7 | -45.9 ±34.3 | 0.55 | |
| | | | Median [Q1, Q3] | -58.2 [-80.0, -43.0] | -51.5 [-64.9, -39.3] | 0.24 | |
| | | | Min, Max | -92.8, 28.6 | -90.9, 81.4 | | |
| | | 24 週 | One-sample t-test | <0.001 | <0.001 | | |
| | | | Wilcoxon signed-rank test | <0.001 | <0.001 | | |
| 対数変換 XOR 活性 (ln (pmol/h/mL plasma)) | 測定値 | 0 週 | n | 20 | 22 | | |
| | | | Mean ±SD | 3.8 ±0.6 | 3.4 ±1.0 | 0.16 | |
| | | | Median [Q1, Q3] | 3.7 [3.4, 4.1] | 3.2 [2.9, 3.9] | 0.045 | |
| | | | Min, Max | 2.8, 5.0 | 2.0, 5.8 | | |
| | | 24 週 | n | 20 | 21 | | |
| | | | Mean ±SD | 2.8 ±0.8 | 2.7 ±0.9 | 0.59 | |
| | 変化量 | 24 週 | n | 20 | 21 | | |
| | | | Mean ±SD | -1.0 ±0.7 | -0.8 ±0.6 | 0.30 | |
| | | | Median [Q1, Q3] | -0.9 [-1.6, -0.6] | -0.7 [-1.0, -0.5] | 0.24 | |
| | | | Min, Max | -2.6, 0.3 | -2.4, 0.6 | | |
| | | 24 週 | One-sample t-test | <0.001 | <0.001 | | |
| | | | Wilcoxon signed-rank test | <0.001 | <0.001 | | |
| | 変化率 | 24 週 | n | 20 | 21 | | |
| | | | Mean ±SD | -25.5 ±18.3 | -20.9 ±15.4 | 0.39 | |
| | | | Median [Q1, Q3] | -24.8 [-40.5, -13.3] | -22.2 [-24.2, -16.9] | 0.43 | |
| | | | Min, Max | -58.1, 6.4 | -55.8, 26.6 | | |
| | | | | One-sample t-test | <0.001 | <0.001 | |

2. PPS から心房細動症例を除外した集団

2.4. ベースライン時 EF50%以上の部分集団での FMD、8-OHdG、XOR 活性、尿酸

| 血中尿酸値 (mg/dL) | 測定値 | 0 週 | Wilcoxon signed-rank test | <0.001 | <0.001 | | |
|------------------|-----|------|---------------------------|---------------------------|-------------------|-------------------|------|
| | | | n | 19 | 22 | | |
| | | | Mean ± SD | 8.2 ± 1.5 | 8.2 ± 1.7 | 0.98 | |
| | | | Median [Q1, Q3] | 8.1 [7.2, 9.2] | 8.0 [7.0, 9.1] | 0.85 | |
| | | | Min, Max | 5.7, 11.6 | 6.0, 12.4 | | |
| | | 12 週 | n | 20 | 22 | | |
| | | | Mean ± SD | 5.3 ± 0.8 | 5.8 ± 1.3 | 0.20 | |
| | | | Median [Q1, Q3] | 5.5 [4.9, 5.8] | 5.8 [5.0, 6.0] | 0.31 | |
| | | | Min, Max | 3.8, 6.7 | 3.6, 9.0 | | |
| | | 24 週 | n | 20 | 21 | | |
| | | | Mean ± SD | 5.3 ± 1.0 | 6.0 ± 1.4 | 0.05 | |
| | | | Median [Q1, Q3] | 5.4 [4.7, 6.0] | 5.9 [5.2, 6.4] | 0.09 | |
| | | | Min, Max | 3.6, 7.3 | 3.6, 9.7 | | |
| | 変化量 | 12 週 | n | 19 | 22 | | |
| | | | | Mean ± SD | -2.9 ± 1.3 | -2.4 ± 1.6 | 0.32 |
| | | | | Median [Q1, Q3] | -2.6 [-3.8, -2.0] | -2.2 [-3.2, -1.6] | 0.27 |
| | | | | Min, Max | -5.5, -0.9 | -6.2, 0.7 | |
| | | | | One-sample t-test | <0.001 | <0.001 | |
| | | | | Wilcoxon signed-rank test | <0.001 | <0.001 | |
| | | | 24 週 | n | 19 | 21 | |
| | | | | Mean ± SD | -2.9 ± 1.8 | -2.2 ± 1.4 | 0.17 |
| | | | | Median [Q1, Q3] | -2.7 [-4.2, -1.8] | -1.7 [-3.2, -1.2] | 0.08 |
| | | | | Min, Max | -6.6, 0.6 | -5.7, -0.1 | |
| | | | | One-sample t-test | <0.001 | <0.001 | |
| | | | | Wilcoxon signed-rank test | <0.001 | <0.001 | |

表 2.4.2. [PPS] ベースライン時 EF50%以上の部分集団での FMD の変化量と EndoPAT の変化量の相関

| 変数 1 | 変数 2 | n | Pearson | | Spearman | |
|-----------------|-----------------------------|----|--------------------|------|--------------------|------|
| | | | 相関係数 (95%CI) | P 値 | 相関係数 (95%CI) | P 値 |
| FMD (%) 24 週変化量 | EndoPAT (RHI 指数) 24 週変化量 | 27 | 0.20 (-0.19, 0.54) | 0.31 | 0.20 (-0.20, 0.53) | 0.33 |