# 60th Scientific Sessions Abstract Form

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MICROVASCULAR EFFECTS OF CHRONIC CHLORTHALIDONE TREATMENT

Harvey N. Mayrovitz and Ronald N. Sampsell
Miami Heart Institute, Miami Beach, Florida

The vascular component of chlorthalidone's (CHLR) antihypertensive action was studied in spontaneously hypertensive rats (SHR). Eight SHR received the drug for 4 weeks via implanted minipumps. At 7-8 weeks of age the cremaster microvasculature was studied and compared with a sham operated control group. Diameter (D), blood velocity, and pressure (Pu) were measured in 1st, 2nd and 3rd order arterioles (A1,A2,A3) and blood flow (Q) calculated for basal states, maximum dilation (adenosine) and graded constriction (norepinephrine,NE). Results show that rats treated with CHLR had significantly ($p<0.05$) lower mean blood pressures (BP, 149 vs 136 mmHg) and heart rates (438 vs 386/min). Basal data (table) show a greater A1 blood flow with CHLR ($P<0.05$, *) at approximately equal Pu, thus indicating a reduced microvascular resistance. Also, Pu changes with low dose NE ($5 \times 10^{-9}$ M) were found to be less in CHLR (6.1 vs 2.6 mmHg, $p<0.05$) suggesting a diminshed arteriolar NE sensitivity. Thus, significant microvascular actions of CHLR are demonstrated.

| | D(μm) | | Q(nl/s) | | Pu(mmHg) | | Pu/BP(%) | |
|---|---|---|---|---|---|---|---|---|
| | SHAM | CHLR | SHAM | CHLR | SHAM | CHLR | SHAM | CHLR |
| A1 | 78.9 | 84.1 | 124 | 190* | 70.0 | 68.9 | 70.0 | 68.9 |
| A2 | 55.4 | 57.0 | 56.0 | 57.8 | 57.6 | 57.8 | 39.8 | 42.8 |
| A3 | 29.5 | 30.8 | 5.04 | 5.62 | 42.9 | 47.0 | 29.3 | 35.0 |

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Identify two key words or phrases from the abstract indexing list to be used for indexing in the supplement to *Circulation,* an AHA journal:

1. 1302 Hypertension
2. 1418 Microcirculation

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**Author's signature** Harvey N. Mayrovitz

The undersigned certifies that all authors named in this abstract have agreed to its submission for presentation at the AHA Scientific Sessions, and are familiar with the ten-author rule (see "Rules for Submitting Abstracts").

**Author's signature** Harvey N. Mayrovitz