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AMERICAN MICROCIRCULATORY SOCIETY ABSTRACTS

63. *Microvascular Effects of Chronic Hydralazine Treatment in Spontaneously Hypertensive Rats.*
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The direct microcirculatory effects of hydralazine on the spontaneously hypertensive rat cremaster muscle microvasculature was studied following 4 weeks of continuous drug treatment via subcutaneously implanted osmotic minipumps. Measurements of vessel diameter (D), blood flow (Q), and pressure (P) were made in three branching orders of arterioles (A1, A2, A3) from which microvascular resistance ($MVR = P/Q$) was determined under control conditions (CC), adenosine induced maximally dilated conditions (MD), and following graded doses of topically applied norepinephrine (NE). The hydralazine treated group (HT), $n = 9$, had a significantly lower mean systemic blood pressure (127 mm Hg) than the nontreated group (NT), $n = 9$, (147 mm Hg), $P < 0.001$. Under CC significant D differences were found only at the A2 level (HT = 60.3 μ m, NT = 51.7 μ m, $P < 0.05$) but significantly lower MVR for the HT group was present at both the A2 and A3 levels. Under MD these differences were absent. Using the A2 MVR as an index of overall microvascular reactivity to NE a higher threshold and a lower sensitivity to NE was found in the HT group. These results suggest that the hypotensive action of hydralazine is due to an increase in small arteriole diameter and a reduced NE sensitivity. (Research supported by the American Heart Association of Greater Miami Inc.)