

APRIL 1986 FASEB ABSTRACT FORM

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PRESENTATION PREFERENCE (Check one)

- ☐ Minisymposium ☐ Slide ☒ Poster
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MINISYMPOSIUM PREFERENCE

1. No. Title

MIN. SLIDE OR POSTER PREFERENCE

1. 770-1 Hypertension Physiology
2. 771-1 Microcirculation (106)
3. 755-1 Capillary blood flow
No. Title

If AAI Topic List is Used. Choose one block only and list minisymposia choices and poster choices all from within same block: Block # _____

CAPILLARY PATHLENGTH AND FLOW HINDRANCE IN NOROMOTENSIVE (WKY) AND HYPERTENSIVE (SHR) RATS. Y-C. Cha and H.N. Mayrovitz Miami Heart Institute, Miami Bch, FL 33140

Though significant arteriolar changes accompanying hypertension are well documented, little is known about the detailed changes in capillary network features which may occur. The flow path length (L) and the flow hindrance (H) offered by each capillary pathway are fundamental network parameters which importantly effect microcirculatory function. To determine if differences in these parameters are associated with the hypertensive process we measured L in the cremaster of 7 WKY and 7 SHR (6-7 wk) via detailed in vivo observations after rendering the microvasculature fluorescent with intravenous administration of Fluorescein Isothiocyanate-Dextran 150 (30µg/g). From measurements of diameter (Di) and length (Li) of each path's segments, H was calculated as the sum of Li/Di^4 for each pathway. Total segments measured were, 934 in WKY and 604 in SHR corresponding to 204 and 146 pathlengths respectively. Groups (WKY vs SHR) differed in mean blood pressure (97.7 vs 144.2 mmHg, $P < 0.001$, t-test) but no difference in L was found (406 ± 12 vs $460 \pm 16 \mu m$, mean \pm SEM). H was significantly greater in WKY (0.489 ± 0.004 vs $0.341 \pm 0.003 \mu m^3$). Since no group differences in Li were found (108.0 ± 3.6 vs $128.5 \pm 5.8 \mu m$), the greater hindrance per capillary pathway is primarily due to a smaller mean Di found in WKY (6.07 ± 0.07 vs $6.46 \pm 0.11 \mu m$, $P < 0.001$).

Blue lines are printer's cut lines; do not type on or outside of these lines.

All compounds that are designated by code or initial letters must be identified adequately in the abstract, e.g., MJ-1999; 4-(2-isopropylamino-1-hydroxyethyl) methanesulfonanilide hydrochloride.

PUBLIC INFORMATION VALUE

- ☒ If requested, I will prepare a lay language summary to be used as the basis of a press release.

IMPORTANT

1. Prepare abstract carefully, on this form only.
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