CASUAL AND BASAL BLOOD PRESSURES III.—IN RENAL HYPERTENSION

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In a previous communication it was shown by Alam and Smirk (1938) that the response of the blood pressure to reflexes that raise the pressure was appreciably smaller in renal hypertension than in essential hypertension and even smaller than in health. It is stated by Müller (1921) that during sleep the blood pressure falls much more in essential hypertension than in health or in renal hypertension. It becomes of interest, therefore, to ascertain the relationship between the casual and basal blood pressures in renal hypertension.

RESULTS AND DISCUSSION

Our observations were made on chronic cases with a clear history of glomerulo-nephritis, and with a blood pressure of 160 systolic or more. The majority of the patients were Egyptian,

FIG. 1.—Casual and basal blood pressure in renal and essential hypertension. Each horizontal line represents a determination of these pressures, the length of the line indicating the difference between the casual and basal pressure (i.e. the supplemental pressure). The systolic pressures are on the left, the diastolic on the right. Continuous lines represent essential hypertension and dotted lines renal hypertension.

○ = casual pressure in an essential hypertension case. × = basal pressure in an essential hypertension case.
● = casual pressure in a renal hypertension case. × = basal pressure in a renal hypertension case.

The results are arranged with the higher casual pressures below and the lower above.

and in this the results may be compared with casual and basal pressures obtained in healthy Egyptians or in Egyptians suffering from essential hypertension. A number of additional observations, made on New Zealand patients, are included. The casual and basal blood pressures of hypertensive patients are set out in Fig. 1, and it will be observed that, in general, the difference between these two pressures is much less when the hypertension is of renal origin than when it is of the "essential" type. This statement applies to both systolic and diastolic readings. Hence in renal hypertension the pressure elevation affects the basal pressure more than the supplemental pressure (as defined in the previous paper).

The observation may be related to the common clinical experience that the blood pressure in chronic renal hypertension cases is less likely to show wide variation during a stay in hospital than in patients with essential hypertension. It would appear that rest and emotion due to unfamiliarity with, or excitement produced by, blood pressure measurements have less effect upon the blood pressure in renal hypertension than in essential hypertension. This observation may be correlated with the decreased susceptibility to reflexes that raise blood pressure, which was demonstrated by Alam and Smirk. It would appear that the blood pressure in renal hypertension is no more reactive to vasomotor stimuli than is the normal blood pressure and is less reactive than the blood pressure in essential hypertension.

SUMMARY

The difference between the casual and basal blood pressure is less in renal hypertension than in essential hypertension.

The pressure elevation affects the basal blood pressure more than the supplemental pressure.

It is likely that the blood vessels in renal hypertension are less reactive to vasomotor impulses than they are in essential hypertension.

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REFERENCES

- Alam, M., and Smirk, F. H. (1938). *Clinical Science*, **3**, 259.
Müller, C. (1921). *Acta Med. Scand.*, **55**, 381.