Thesis Title **Plasma Bradykinin in Normotensive and Primary Hypertensive Thai Subjects**

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ABSTRACT

Bradykinin (BK) is the biological vasodilator peptide which is responsible for many physiological and pathological conditions. In this study, the plasma BK levels and the 24-hour ABP in normotensive and primary hypertensive Thai patients were investigated. In addition, the effect of 2.5 mg ramipril on plasma BK levels and its effect on 24-hour ABP in primary hypertensive Thai subjects were also studied.

The mean 24-hour ABP in nine normotensive Thai subjects aged between 19 to 25 years was 125/73 mmHg. The characteristic of 24-hour ABP profile in these subjects showed diurnal variation with the nadir of BP (111/64 mmHg) at 00:30 AM. For hypertensive subjects, the mean of 24-hour, day-

time and night-time ABP were 152/100, 157/103 and 141/93 mmHg, respectively. The 24-hour ABP profile showed diurnal variation with the nadir of BP (133/89 mmHg) at 1:00 AM and two of them were non-dipper. After receiving 2.5 mg once daily of ramipril for 1 week, the average 24-hour, day-time and night-time ABP were significantly decreased from baseline ($p< 0.05$).

Plasma BK levels were analysed by radioimmunoassay technique. The mean ± SEM of plasma BK levels in normotensive subjects with age ranged from 19 to 25 years and with age ranged from 40 to 60 years were 39.01 ± 7.74 pg/ml and 69.74 ± 8.37 pg/ml, respectively. The normotensive group with age range from 40 to 60 years had significantly higher plasma BK levels than the normotensive group with age range from 19 to 25 years ($p<0.05$). The plasma BK levels of hypertensive subjects were 275.10 ± 65.21 pg/ml which were significantly greater than that of both normotensive groups ($p < 0.01$).

After receiving a single oral dose of 2.5 mg ramipril, the BK levels in hypertensive subjects slightly increased from 275.10 ± 65.21 pg/ml to 304.82 ± 70.40 pg/ml and 370.27 ± 80.25 pg/ml at 15 and 30 minutes, respectively. However, after 2.5 mg once daily of ramipril for 1 week, the plasma BK levels did not increase from baseline, even though the average 24-hour ABP in these patients showed significant reduction.

This study showed that plasma BK levels in hypertensive subjects were higher than those of normotensive subjects. These higher levels of plasma BK suggested the compensatory mechanism to elevated BP. In addition, some BK accumulation after a single dose of ramipril may explain some of the hypotensive effect of this compound.