Blood pressure increase by paracetamol (acetaminophen)

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Analgesics belonging to the nonsteroidal anti-inflammatory drugs (NSAID) are associated with fluid retention secondary to interactions with renal function, which may increase blood pressure and reduce the efficacy of antihypertensive medications in some patients. Paracetamol (acetaminophen) is also a widely used analgesic, and almost one in ten patients being initiated on antihypertensive medication are also prescribed paracetamol. Some small studies examining the effects of paracetamol on blood pressure may be taken to suggest an increase in blood pressure, but the results have been conflicting.

A recent publication by MacIntyre et al provides important new information about this issue. In a double-blind, placebo-controlled crossover study the authors evaluated the effects of paracetamol 1 g qid for 2 weeks on ambulatory blood pressure in 110 patients with untreated or stable treated hypertension (mean daytime ambulatory blood pressure <150/95 mm Hg) and no concomitant major cardiovascular disease, analgesic treatment, or other major confounding conditions. In all, 103 of the 110 randomized patients completed the study. Mean age was 61 years, 76% were male, 68% on antihypertensive medication, and mean daytime ambulatory blood pressure was 133/81 mm Hg (mean office blood pressure 137/86 mm Hg). The primary outcome was a comparison of the change in mean daytime systolic ambulatory blood pressure by treatment. Additional per-protocol analyses were performed in the 90 participants compliant to randomized treatment (as assessed by serum drug levels).

The results show a placebo-adjusted increase in mean daytime systolic ambulatory blood pressure by paracetamol of 4.7 mm Hg (95% confidence interval 2.9–6.6, P <0.0001). Secondary outcomes showed a 4.2 mm Hg (2.4–6.0, P <0.0001) increase in mean 24 h systolic ambulatory blood pressure, and 1.6 mm Hg (0.5–2.7, P <0.01) and 1.4 mm Hg (0.3–2.5, P =0.017) increases in mean daytime and 24 h diastolic ambulatory blood pressures, respectively. Analyses per-protocol showed similar results, and main findings in untreated and treated patients were similar.

This well designed and conducted, short-term study suggests that paracetamol can increase blood pressure by 4-5/1-2 mm Hg in hypertensive people. The magnitude of blood pressure increase is, if the effects are maintained over prolonged time clinically significant. Thus, paracetamol may not be an innocent drug in the context of cardiovascular disease. There are however, important limitations for this study to consider. Thus, it remains to be shown if the observed increase in blood pressure will be maintained over longer periods of treatment with paracetamol. People without hypertension were not evaluated, and the effects in patients with concomitant cardiovascular disease and/or chronic pain were not addressed. This notwithstanding, it may be reassuring to note that a large retrospective cohort study of older hypertensive patients in primary care found no evidence of a sustained rise in blood pressure caused by paracetamol treatment. Also, in another large primary care observational cohort study we have previously confirmed that NSAIDs can increase blood pressure in hypertensive patients. However, concomitant use of NSAIDs did not impair the chance to reach target blood pressure. Thus, it may seem wise to advise regular evaluation of blood pressure in people on extended treatment with paracetamol (in addition, of course, to those on treatment with NSAIDs) and...
to initiate or adjust antihypertensive medication accordingly to ascertain adequate blood pressure control.

References


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