

SHOULD BETA BLOCKERS STILL BE RECOMMENDED AS FIRST-LINE THERAPY FOR ESSENTIAL HYPERTENSION IN YOUNGER PATIENTS?

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Conflict of interest: None

Ng LW, Teng CL. Should beta-blockers still be recommended as first-line therapy for essential hypertension in younger patients? *Malaysian Family Physician*. 2008;1(1):32-33

CASE SCENARIO

Mr. M is a 48 year-old male teacher who has had essential hypertension for the past 2 years. He is a non-smoker and is not diabetic. There is no family history of heart disease. His blood pressure is well-controlled at 129/78 mmHg (pulse rate 60/min) with atenolol at 100mg daily. Clinically, there is no target organ damage. He has heard that the use of beta-blockers in hypertension is now controversial and has asked if he should continue taking atenolol.

Question: In a hypertensive patient of less than 60 years in age without co-morbidity, should beta-blockers be the first-line therapy?

COMMENTARY

Hypertension is a major risk factor of stroke and other cardiovascular events. It is important to maintain good control of blood pressure to prevent end-organ damage. Beta-blockers have been widely used for the last four decades as the first-line treatment for hypertension but their efficacy was recently questioned. Messerli *et al*,¹ in a meta-analysis of ten randomised controlled trials (RCTs) of hypertension treatment in the elderly (aged ≥ 60 years), found that beta-blockers were inferior to diuretics for blood pressure control and long-term outcome measures¹ (e.g. fatal stroke, coronary artery disease, cardiovascular mortality, all-cause mortality).

A widely publicised meta-analysis (based on 18 RCTs) by Lindholm *et al*² found that beta-blockers were more effective than placebos for blood pressure control and produced a 19% reduction in the risk of stroke. However, when compared with other anti-hypertensive drugs, there was a 16% increase in the risk of stroke, although the incidences of myocardial infarction (MI) and all-cause mortality were not statistically

significant.² A meta-analysis published earlier by the same group of investigators even found that atenolol, when compared to other anti-hypertensives, was associated with higher Chances of total mortality, cardiovascular mortality and stroke, despite equivalent reduction in blood pressure³ (where the mean ages of patients in the atenolol arm were between 52 and 70 years)

Khan *et al*,⁴ extended Lindholm's meta-analysis by including 21 RCTs published between 1982 and 2005. This meta-analysis compared the outcome of beta-blockers in younger (<60 years) and older (≥ 60 years) patients. They found that in placebo-controlled trials, beta-blockers reduced major events (death, MI, stroke) in younger patients by 14% (RR=0.86, 95%CI 0.74 to 0.99) but not in older patients (RR=0.89, 95%CI 0.75 to 1.05). When compared to other classes of anti-hypertensives, there was no difference in the event rates in younger patients (RR=0.97, 95%CI 0.88 to 1.07) but an excess risk of 18% in older patients was observed (RR 1.18, 95%CI 1.07 to 1.30).⁴

In summary, Lindholm *et al*² showed that beta-blockers are effective for blood pressure reduction and prevention of stroke when compared to placebos (or no treatment) but they are inferior to other anti-hypertensives (e.g. diuretics, angiotensin-converting enzymes inhibitors and angiotensin receptor blockers). Beta-blockers, especially atenolol, are clearly less effective in elderly hypertensive patients^{2,3} but may be as good as other anti-hypertensives in younger hypertensive patients for the prevention of long-term outcomes.³ In a review of 13 hypertension drug trials published in the last 10 years, Ong⁵ concluded that prevention of cardiovascular events is attributed more to the achievement of targeted blood pressure treatment rather than anti-hypertensive drug choice. In younger patients with isolated hypertension and no other morbidity, as in our patient Mr. M, it is acceptable to continue using beta-blockers as the first-line anti-hypertensive agent.

References

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The "C" Words

Communication speaks to how persons understand each other and how information is transferred in organizations. For most of us, failure to speak is less critical than failure to listen. Most of us are better at pushing information out than at taking it in.

Coordination is about efficiency. Unlike communication, however, coordination looks to inform each unit or part of the whole as to how and when it must act.

Cooperation is now a hallmark of corporate culture. The message is clear: get with the group, be a "team player". Cooperation is important but so is divergence.

Collaboration is distinct from each of the "C" words profiled above. Unlike communication, it is not about exchanging information. It is about using information to create something new. Unlike coordination, collaboration seeks divergent insight and spontaneity, not structural harmony. And unlike cooperation, collaboration thrives on differences and requires the sparks of dissent.

Source:

Denise L. Collaboration vs. C-Three (Cooperation, Coordination, and Communication). *Innovating*. 1999 Spring,7(3). <http://www.zsr.org/results-framework-resources-2/collaborationvstheothercwords.pdf>