There is no significant association between use of β-blockers and depression

The Science behind the Tip

The methodological quality of early studies of the association of systemic or topical β-blocker therapy and depressed mood is weak. Most of the evidence supporting an association has used case reports. Further, the mechanism by which β-blockers might induce depression remains unclear. Lipophilic β-blockers easily penetrate the blood-brain barrier and should thus cause more central nervous system disturbances than hydrophilic ones. Yet, relative lipophilicity has not proved to play a role[1,2].

The increased use of β-blockers in recent years in the treatment of myocardial infarction and heart failure has lead to renewed interest in the matter. Several syntheses of the data[3] and a meta-analysis of randomized clinical trials[2] have shown that the association is much weaker than originally believed and might even be non-existent. Additionally, a recent multicenter prospective study of post-myocardial infarction patients could not demonstrate an association in the first year of treatment[4].

In line with the cardiovascular literature, a retrospective observational population-based cohort study found no effect of topical β-blockers on the prevalence of depression among glaucoma patients[5].

References

1. Gengo FM, Gabos C. Central nervous system considerations in the use of beta-blockers, ACE-inhibitors, and thiazide diuretics in managing essential hypertension. *Am Heart J.* 1988;116:305-10.
2. Ko DT, Hebert PR, Coffey CS, *et al*. Beta-blocker therapy and symptoms of depression, fatigue, and sexual dysfunction. *JAMA*. 2002;288:351-7.
3. Ried LD, McFarland BH, Johnson RE, Brody KK. Beta-blockers and depression: the more the murkier? *Ann Pharmacother.* 1998;32:699-708.
4. van Melle JP, Verbeek DE, van den Berg MP, et al. Beta-blockers and depression after myocardial infarction: a multicenter prospective study. *J Am Coll Cardiol*. 2006;48:2209-14.
5. Kaiserman I, Kaiserman N, Elhayany A, *et al*. Topical beta-blockers are not associated with an increased risk of treatment for depression. *Ophthalmology*. 2006; 113:1077-80.