Which is the Best? IV Lingocaine or IV Verapamil to Blunt Hyperdynamic Response During Electroconvulsive Therapy Without Altering the Selzure Duration

D. E.S. M. Soud , H. Hashem and M. Sehlo

Abstract

Background: *Electroconvulsive therapy (ECT) is commonly associated with acute hyperdynamic cardiovascular responses.* ***Methods:*** *In this study, we compared the effects of IV lignocaine to IV verapamil on the heart rate (HR) and mean arterial blood pressure (MAP) during ECT. Also, we assessed seizure duration using both the cuff method and the two-lead electroencephalography. We studied 30 patients using a randomized, controlled trial divided into 3 equal groups, each one was 10 patients. The control group was given IV saline 0.075 ml/kg, lignocaine group was given IV lignocaine 2% (1.5 mg/kg) and verapamil group was given 0.1 mg/kg, and this treatment was conducted one minute before intravenous propofol 1.5 mg/kg. Succinylcholine 1.5 mg/kg was then administered intravenously and electrical stimulation was administered after fasciculation. Measurements were taken at the baseline, prior to succinylcholine, prior to ECT and after ECT.* ***Results:*** *Intravenous lignocaine significantly reduced the increases in HR after ECT as compared with the placebo. The use of intravenous lignocaine was, however, associated with a remarkably shortened seizure duration. While in the verapamil group, the increases in the HR and MAP after the electrical stimulus were significantly smaller after the verapamil treatment compared with the control group but does not affect seizure duration.* ***Conclusion:*** *Due to the reduction in seizure duration, routine administration of intravenous lignocaine may-not be advisable since it may interfere with the psychotherapeutic efficacy of ECT. In the contrast, verapamil reduces the increases in peak HR and MAP seen after ECT but does not affect seizure duration. So, verapamil does not interfere with the psychotherapeutic efficacy of ECT. (Paper presented in Zagazig university conference, November, 2004).*

Introduction

Electroconvulsive therapy (ECT) is an effective method of treatment for many psychiatric disorders, the most common indication is severe major and medication-resistant depression, other important indications include severe disorder depression, schizoaffective disorder and other psychiatric disorders such as schizophrenia and bipolar mania, neuropsychiatric disorders that respond to ECT as Parkinson's disease and neuroleptic malignant syndrome (Manly, D.T. and Oakley, S.P. 2001). Although ECT is remarkably safe when the patient has suitable anesthetic management (Abram, R. 1992), cardiac arrhythmia, as well as acute hypertensive and neurocndocrine responses are often observed immediately after treatment (Mulgaokar, G.D.; Dauchot, P.J.; Duffy, J.P. and Anton. A.M. 1985, Cuche, J.L.; Brochier, P.; Klioua, N. et al. 1990). The typical cardiovascular response to ECT consists of generalized autonomic nervous system stimulation with an initial parasympathetic-induced bradycardia lasting 10 to 15 seconds, followed immediately by more prominent sympathetic response that results in transient tachycardia and hypertension lasting 5 minutes or longer. The cardiovascular response is associated with release of catecholamines and occasional cardiac arrhythmias (Castelli, I.; Steiner, L.A.; Kaufmann, M.A. et al. 1995). Systolic blood pressure (SBP) is transiently increased by 30-40% and heart rate (HR) is increased by 20% or more resulting in a two or fourfold increase in the rate-pressure product