What can we learn from JUPITER?

41

CR Kumana, HF Tse, CP Lau
Department of Medicine, The University of Hong Kong, Queen Mary Hospital, Hong Kong

Introduction: The randomised, double-blind, placebo-controlled JUPITER trial reported outcomes in 17 802 subjects (median age, 66 years) with C-reactive protein concentrations ≥2 mg/L and no other coronary heart disease risk factors, followed up for a median of 1.9 years. The study was prematurely terminated due to a 'favourable' impact on the primary (composite) endpoint, without due consideration of absolute effects. We therefore set out to derive number needed to treat (NNT)/year values to gauge absolute benefit or harm.

Methods: Using data reported in JUPITER, we calculated crude values for relative risk (RR) and NNT/year together with 95% confidence intervals (CIs). Data from the 4S study was used for comparison.

Results: Calculated values (95% CIs) for these parameters are shown in the table*

Trial	Subjects†	Event†	%RR (range)	NNT/year (range)
4S	Cholesterol ↑ and CHD	CHD death and non-fatal MI	69 (61 to 79)	63 (49 to 89)
JUPITER	Cholesterol not ↑ No CHD CRP ↑	Primary composite end-point‡	57 (46 to 70)	155 (144 to 242)
		Fatal and non-fatal MI	46 (30 to 70)	457 (298 to 985)
		Death from any cause	80 (66 to 97)	317 (179 to 1403)
		Physician reported DM	125 (104 to 150)	–313 (–173 to –1607)§

* See Kumana CR et al 2009, Evidence Based Medicine 14:70 for all references cited
† CHD denotes coronary heart disease, MI myocardial infarction, and DM diabetes mellitus
‡ Non-fatal MI, stroke, hospitalisation, revascularisation procedure, or cardiovascular death
§ Negative NNT = number needed to harm

Conclusion: Small absolute benefits are off-set by a small absolute risk of acquiring diabetes mellitus.

Herpes simplex encephalitis: how good are we in diagnosing this condition?

42

MWM Kwan, W Mak, KH Chan, RTF Cheung, SL Ho
Department of Medicine, The University of Hong Kong, Queen Mary Hospital, Hong Kong

Introduction: Herpes simplex encephalitis (HSE) is the commonest sporadic infective encephalitis in Hong Kong. Early recognition of HSE, which relies on a high index of suspicion, is important as effective treatment is available. Empirical acyclovir is advocated for all cases of clinically suspected viral encephalitis. Electroencephalography (EEG) is a routine investigation in suspected HSE.

Methods: The EEG database of Neurodiagnostic Unit, Queen Mary Hospital, was reviewed retrospectively. All referrals from April 2006 to March 2009 with a diagnosis of suspected HSE treated with empirical intravenous acyclovir were identified. Their presenting features, imaging and laboratory findings, and final diagnoses were reviewed.

Results: During the study period, 60 patients (mean age, 51 years; range, 18-90 years, M:F ratio=13:7) underwent EEG for suspected HSE. Presenting features included fever (n=39), confusion (n=39), impaired consciousness (n=31), focal signs (n=15, seizure in 8), and headache (n=13). All patients underwent brain CT and 45 had MRI. The commonest imaging findings were unrelated old changes (n=20) and normal study (n=16). Lobar inflammation was detected in four patients. EEG was normal, showed diffused abnormalities, or focal/multifocal abnormalities in 16, 31, or 13 patients, respectively. Lumbar puncture was performed in 59 patients. Total cell count was ≤10×10^6/L in 68% of patients and CSF protein was <0.8 g/L in 51% of patients. Polymerase chain reaction for herpes simplex virus was positive in one out of 56 requests. Viral encephalitis was the final diagnosis in three patients (HSE=1, Japanese encephalitis=1, other virus=1). Other common diagnoses included meningitis (n=9), non-CNS sepsis (n=9), psychiatric illnesses (n=8), epileptic seizure (n=6), and acute stroke (n=5).

Conclusion: Our findings demonstrate that we were exercising a high index of suspicion for diagnosing HSE. Our liberal use of empirical acyclovir was also consistent with the IDSA (Infection Diseases Society of America) recommendations. Despite our low threshold of investigating for HSE, only one case was identified over 3 years, suggesting HSE is an uncommon condition.