

at 0, 30, 60, 90, 120 and 180 min after glucose loading. The plasma glucose response and total insulin secretion were calculated, and insulin sensitivity was assessed using various formulae, including ISI-stumvoll and OGIS-180 indexes.

Although basal glucose and insulin concentrations were relatively similar for patients and controls, glucose concentrations at 90, 120 and 180 min were significantly higher in migraine patients than in controls. When insulin sensitivity was compared between the two groups, ISI-stumvoll and OGIS-180 indexes showed a significant alteration in migraine patients compared with controls. OGIS-180 was found to be significantly lower in migraine-without-aura patients than in controls.

The authors suggest that these results might guide the development of new therapies for migraine patients. Lowering insulin resistance with aerobic exercise could reduce vascular complications, and insulin-sensitizing drugs might, in time, provide a prophylactic migraine therapy.

Christine Kyme

Original article Rainero I *et al.* (2005) Insulin sensitivity is impaired in patients with migraine. *Cephalalgia* 25: 593–597

Encouraging clinical potential for Lorenzo's oil

Asymptomatic patients with X-linked adrenoleukodystrophy (ALD) can improve their clinical outcome by consuming Lorenzo's oil, according to a recent prospective study by Moser *et al.* from the Kennedy Krieger Institute. Lorenzo's oil (4:1 glyceryl trioleate–glyceryl trierucate) has previously been shown to normalize plasma levels of fatty acids such as hexacosanoic acid (C26:0) within 4 weeks in most ALD patients, and it appears that the biochemical effect can translate into a clinical benefit.

The researchers followed the progress of 89 asymptomatic boys (mean age 4.8 years) with ALD, all of whom were treated with Lorenzo's oil and moderate fat restriction following measurement of baseline plasma C26:0 levels. Follow-up continued for an average of 6.9 years—neurological examination and brain MRI scans were undertaken at 6–12-month intervals, in addition to measurement of plasma C26:0 levels. A proportional hazards model was used to assess any association between C26:0 levels and development of neurological and MRI abnormalities.

Twenty-four percent of patients developed MRI scan abnormalities, and 9% developed both neurological and MRI abnormalities. Interestingly, abnormalities developed only in patients aged ≤ 7 years at baseline. There was a significant association between abnormal MRI scan development and increase in plasma C26:0 levels for patients of all ages.

Concluding that C26:0 reduction by Lorenzo's oil is associated with a reduced risk of MRI abnormality development, the authors recommend that asymptomatic boys with ALD who are at risk of developing the rapidly progressive cerebral ALD should be treated with Lorenzo's oil therapy.

Christine Kyme

Original article Moser HW *et al.* (2005) Follow-up of 89 asymptomatic patients with adrenoleukodystrophy treated with Lorenzo's oil. *Arch Neurol* 62: 1073–1080

Multiple sclerosis can be confirmed by MRI 3 months after first scan

Currently, patients with clinically isolated syndrome (CIS) and brain lesions on MRI suggestive of multiple sclerosis (MS), are offered a confirmatory MRI scan after 6 months. Researchers in Italy have found, however, that conversion to a diagnosis of MS based on MRI can be made after 3 months in most cases, suggesting that the interval between initial and repeat MRI scans could be reduced.

This single-center, 6-month study analyzed data from 60 patients (21 male) with CIS and at least three T2-weighted hyperintense brain lesions on gadolinium-enhanced MRI, suggesting MS. Median time between onset of symptoms and study enrollment was 4 months (range 2–10 months). Patients were followed up with monthly-repeat MRI using triple-dose gadolinium. Conversion of the diagnosis from CIS to MS was defined as the presence of at least one new brain lesion (either T2-weighted or gadolinium-enhancing). There were more T2-weighted lesions at baseline, and diagnosis was confirmed earlier when these lesions were used as the basis of conversion. The rate of conversion remained almost stable in the last two MRI scans. Patients with higher numbers of lesions at study entry had more active disease and accumulated more permanent lesions.