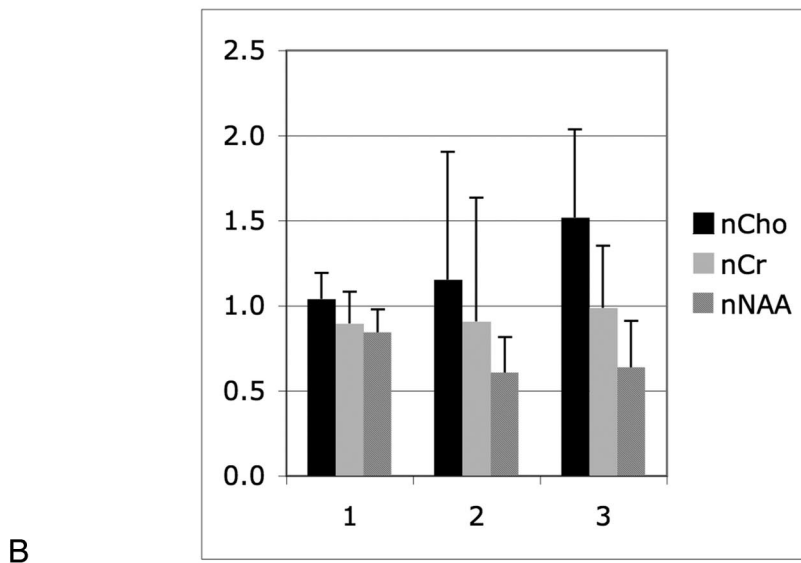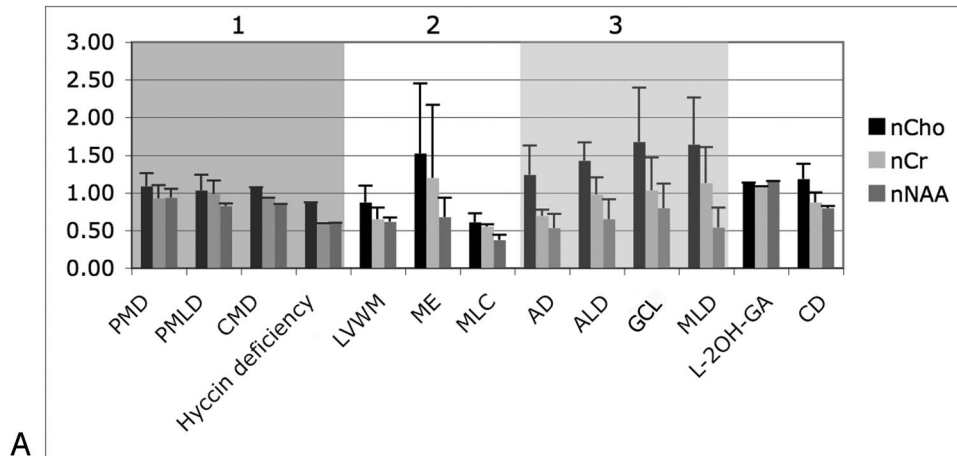**Online Fig 1 (PDF).** Bar graph with white-matter intra-voxel ratios of Cho/NAA, Cho/Cr and NAA/Cr by diagnosis (*A*) and by pathophysiology (*B*). Groups 1, 2 and 3 correspond to hypomyelination, rarefaction and demyelination, respectively. Note that the three intra-voxel ratios differ widely among groups.

Online Fig 2 (PDF). Bar graph with white-matter ratios of Cho, Cr and NAA normalized to parietal gray matter by diagnosis (*A*) and by pathophysiology (*B*). Groups 1, 2 and 3 correspond to hypomyelination, rarefaction and demyelination, respectively.

Online Fig 3 (PDF). Stepwise discriminant analysis showing classification of diagnosed leukoencephalopathy cases. The discriminant variables f1 and f2 are plotted for (1) hypomyelination (blue diamonds), (2) rarefaction (red squares) and (3) demyelination (yellow triangles). The centroid of each group is indicated by the larger symbol of the same color. Generally, good separation between groups is observed, although some overlap is present, particularly between groups 1 and 2.