Whole brain analysis: patients with psychiatric co-diagnoses excluded

Effect of age, hypothesis 1: As in the whole sample, the regression analysis revealed a significant effect of age over a large array of cortical regions in a way that the older the subjects, the lower the GMVs and the paracingulate cortex/medial prefrontal cortex (MNI coordinates, y/x/z = -9/59/17; Z-value = 5.53; number of voxels = 16735) was again found as maximum in the largest cluster. Further age effects were again seen in the anterior cingulate cortex and medial prefrontal cortex, insula, lateral prefrontal cortex, inferior and superior parietal regions and precuneus. As before, no significant effects of age were found in the visual or somatosensory cortices, in the amygdala or the hippocampus.

Group differences, hypothesis 2: As in the whole sample, the contrast comparing patients with depression only (n=42) and healthy control subjects revealed a significant group difference in the dorsolateral prefrontal cortex (dlPFC) with greater GMV in patients than in healthy control subjects (MNI coordinates, y/x/z = 45/18/51; Z-value = 4.28; number of voxels = 337). However, this result survived corrections for multiple comparisons only in a way that it was significant at the cluster-level (p<0.05), but not an additional FWE-correction.

Analyses according a priori hypotheses from other studies

Differential effect in the hippocampus (ROI analysis), hypothesis 3: Comparing GMV in the left and right hippocampus ROIs, we confirmed the finding of Jaworska et al. (9) with significantly lower GM values in the posterior hippocampus in depressed youth without any co-diagnoses compared to healthy controls (MNI coordinates, x/y/z = -17/-35/-2; Z-value = 2.53; number of voxels = 10).

Group differences in thalamus (whole brain analysis) and anterior cingulate cortex (ROI analysis), hypothesis 4: We confirmed the differential effect in the thalamus with greater volumes in depressed subjects without any co-diagnoses (n=42) compared to healthy controls (MNI coordinates, x/y/z = -14/-18/20; Z-value = 3.11; number of voxels = 5) at given thresholds of p<.001 at the voxel-level and FWE small volume corrections at p< .05, controlling for multiple comparisons. The result regarding the anterior cingulate cortex was not significant in the subsample without psychiatric co-diagnoses.