Survey of OSEM and nonOSEM evaluation of the uptake values were found in the group of normals with the lowest mean age (60 years vs 66/67 years).

Methods

The EXINI DAT software (EXINI diagnostics AB, Lund Sweden) was used for automated quantification at all hospitals. In two hospitals, groups of ‘true’ healthy volunteers were examined, whereas in the two other hospitals patients that retrospectively were found to have a normal DAT scan and no clinical signs of striatal affection.

Results

Threshold values for putamen/caudate ratios were almost similar at all hospitals, but the values for specific uptake varied among hospitals. The reference limits for the three hospitals using OSEM, scatter- and attenuation correction (CT or line source) were roughly found within the same range, whereas the hospital using filtered backprojection and uniform attenuation correction (Chang), without scatter correction, presented much lower values. Among the three hospitals using OSEM and non-uniform attenuation correction algorithms, the highest specific uptake values were found in the group of normals with the lowest mean age (60 years vs 66/67 years).

Conclusion

Calculation of specific uptake ratios for DAT brain SPECT studies are dependent on the type of camera, collimator, acquisition, and reconstruction parameters and, hence, are not easily transferred among hospitals. However, calculation of the internal ratio between radioactivity in putamen and the caudate nucleus seems to be a fairly robust parameter comparable among data obtained with different SPECT systems.