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Clinical imaging

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Scientists, researchers and clinicians all benefit from molecular imaging in dementia providing almost daily new insights into their basic biology and pathophysiology. Targeting specific aspects increasingly gains impact on establishing the correct diagnosis, following the course of dementia or developing CNS drugs. The previous two speakers have highlighted the possible targets and imaging tracers for application in dementia, which in the future will significantly broaden the knowledge provided in the past by the conventional PET and SPECT approaches focused on perfusion and glucose metabolism. The latter, however, – even though "less molecular" – are generally available and thus have been extensively used in the clinical work-up of dementia patients. This talk gives an update on the results of the clinical imaging studies published in recent years. Typical imaging patterns of the major types of neurodegenerative dementia – Alzheimer's disease, frontotemporal dementia, and Lewy body dementia – will be presented and the diagnostic discrimination between them will be discussed. Assessment of MCI patients and the probability of transition in manifest dementia will be addressed together with its prognostic relevance. Furthermore recent advances in analyzing tools which further improved the high diagnostic accuracy already reached by visual assessments will be presented. Even though in competition with new MRI techniques and CSF biomarkers conventional PET and SPECT imaging have shown to be both, sensitive and specific tools in assessment of dementia providing valuable information for clinicians beyond the one of the mentioned alternatives.

References

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