PHARMACOKINETICS OF RIVASTIGMINE PATCH (EXELON) IN PATIENTS WITH PARKINSON’S DISEASE DEMENTIA

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Introduction: Rivastigmine (Exelon®) improves cognitive function, daily activities and behavior, as well as overall dementia symptoms in patients with mild-to-moderate Alzheimer’s disease (AD) and Parkinson’s disease dementia (PDD).

Aims: To investigate the steady-state pharmacokinetics of rivastigmine patch in PDD patients.

Methods: A sub-group of 18 PDD patients treated with rivastigmine patch 10 cm² (9.5 mg/24h) and enrolled in a prospective, long-term (76 weeks) safety study of rivastigmine participated in this pharmacokinetic evaluation. Six blood samples per patient were collected over 24 hours, and measured for rivastigmine and its metabolite NAP226-90 using liquid chromatography tandem mass spectrometry. Pharmacokinetic parameters were derived using non-compartmental methods.

Results: Rivastigmine plasma concentrations increased slowly following patch application, reaching peak levels (Cmax 6.72 ± 3.23 ng/mL) at median time (tmax) of 8 h post application. Area under the curve (AUC0-24h) was 117 ± 62.1 ng·h/mL. The fluctuation index, a measure of the difference between maximum and minimum concentrations, was 0.84. The inter-patient variability (coefficients of variation) was in the range 42-63%. NAP226-90 showed the same pattern as the parent compound with Cmax (3.04 ± 0.969 ng/mL) reached at 9.0 h post application. AUC0-24h was 60.6 ± 17.9 ng·h/mL. Patch adhesion was good, and the overall drug released from patch amounted to 47.1% of drug load (18 mg). Patch was well tolerated with data in line with historic findings.

Conclusion: The pharmacokinetics of rivastigmine patch in PDD patients was in full agreement with historic observations in other populations, in particular in AD patients.