

A COMPARISON OF SELEGILINE AND RASAGILINE IN PATIENTS WITH PARKINSON'S DISEASE.

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Selegiline and rasagiline are both used in Parkinson's Disease for neuroprotection, symptomatic relief with mono- and with adjunct therapy, and for wearing-off in particular. There are, however, no clinical studies analyzing a direct comparison of selegiline and rasagiline in patients with Parkinson's Disease. We studied all Randomized Controlled Trials (RCT) listed in PUBMED which were full-text available in English, German or French language and analyzed them according to the 'EFNS evidence classification and rating of recommendations' of the European Federation of Neurological Societies, and the 'Classification of Evidence for Therapeutic Articles' of the American Academy of Neurology. The following outcome measures were compared between rasagiline and selegiline: delay of the need for levodopa (levodopa rescue) in de novo patients; decrease in clinical decline (irrespective of neuroprotective or symptomatic effect); levodopa sparing effect; symptomatic therapy of wearing-off, risk of peak-dose dyskinesia; mortality risk, and adverse events. As far as symptomatic or neuroprotective effects are concerned, we looked for outcome measures UPDRS-total, UPDRS-motor, and UPDRS-ADL, if possible.

Although clear differences between selegiline and rasagiline can be found in animal experiments, studies in patients with Parkinson's Disease do not reveal clinically significant differences on the outcome measures mentioned above. However, it must be taken into account that a comparison was not always possible due to lack of sufficient data (delay of the need for levodopa). The risk of adverse events is computed only from studies that provided adverse events in the controls too. The relative risk on gastrointestinal adverse events is probably lower in rasagiline, but seems to be higher in other domains in patients on rasagiline (for example: cardiovascular, disorders of sleep). The relative risk of the total number of adverse events did not differ between rasagiline and selegiline. Our conclusion about the effect of rasagiline and selegiline on wearing-off requires the most explanation. The beneficial effect of rasagiline on wearing-off has been proven with class I trials. This is not the case with selegiline trials. Most selegiline trials on wearing-off are much older and are of class III only. However, looking at the individual selegiline trials it appeared that most of them did show beneficial effect of selegiline in wearing off, although the results did not reach statistical significance. This is probably due to the fact that the power of these selegiline trials was insufficient, mainly due to too small numbers of patients, resulting in so-called type II error. Because of the fact that most selegiline trials on wearing-off showed the same indications for type II errors, we conclude that selegiline is probably as effective as rasagiline, but definite proof is lacking.