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Nonsteroidal anti-inflammatory drugs may protect against Parkinson disease

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Objective: Markers of neuroinflammation, including activated microglia and increased levels of circulating proinflammatory cytokines, have been observed in the brains and CSF of patients with Parkinson disease (PD). Yet the link between anti-inflammatory agents and PD in humans remains uncertain, despite indications that neuroinflammation may contribute to cell death in the PD brain and experimental evidence of anti-inflammatory

agents such as nonsteroidal anti-inflammatory drugs (NSAIDs) exerting neuroprotective effects in animal models.

Methods: Using a population-based approach, we studied NSAID use among 293 incident idiopathic PD cases and 286 age-, race-, and gender-matched controls from three rural California counties.

Results: Our data suggested a decreased risk of PD among regular (≥ 2 pills/week for at least 1 month) aspirin NSAID users (OR, 0.80; 95% CI, 0.56 to 1.15). A stronger protective effect was observed for regular nonaspirin NSAID users (OR, 0.52; 95% CI, 0.35 to 0.79), particularly those who reported 2 or more years of use (OR, 0.44; 95% CI, 0.26 to 0.74). The aspirin effect estimates differed by gender, showing a protective effect only in women, especially among long term (≥ 24 months) regular users (OR, 0.51; 95% CI, 0.26 to 1.02).

Conclusion: Our study contributes to the growing body of literature suggesting a protective role for nonsteroidal anti-inflammatory drugs (NSAIDs) in Parkinson disease (PD). Given our results and the biologic plausibility of a neuroprotective function for NSAIDs there is a pressing need for further studies elucidating the protective role such drugs may play in PD.

GLOSSARY: **MPTP** = 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine; **NSAIDs** = nonsteroidal anti-inflammatory drugs; **PD** = Parkinson disease.

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