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Rosacea linked to increased Parkinson disease risk in Danish population study

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Patients with rosacea, a chronic inflammatory skin condition, appeared to have increased risk of new-onset Parkinson disease compared with individuals in the general Danish population but further studies are need to confirm this observation and the clinical consequences of it, according to an article published online by *JAMA Neurology*.

What causes rosacea is unclear but increased matrix metalloproteinase (an enzyme used by the body to break down proteins) target tissue activity appears to play an important role. Parkinson disease (PD) and other neurodegenerative disorders also show increased matrix metalloproteinase activity that contribute to neuronal loss.

Alexander Egeberg, M.D., Ph.D., of the University of Copenhagen, Denmark, and coauthors examined the risk of new-onset PD in patients with rosacea. The authors analyzed Danish population data and the study included more than 5.4 million individuals.

Of the 5.4 million individuals, 22,387 were diagnosed with PD and 68,053 were registered as having rosacea. The incidence rates of PD were 3.54 per 10,000 person-years in the population and 7.62 per 10,000 person-years in patients with rosacea, according to the results. PD also appeared to occur about 2.4 years earlier in patients with rosacea.

Patients who filled prescriptions for tetracyclines, which are used to treat rosacea, appeared to have a slightly decreased risk of PD, regardless of the presence of rosacea, the study also reports.

While the authors hypothesized about a possible pathogenic link between rosacea and PD, they note the basis for that link is unknown and that other factors could contribute to the association. The authors make clear their study cannot prove causation and that the Danish population, which is primarily of Northern European descent, may limit extrapolating the results to other ethnicities.

"Further studies are needed to confirm this observation and its clinical consequences," the authors conclude.

"In sum, Egeberg et al show, for what appears to be the first time, that there is a significantly increased risk of PD in patients with rosacea. The authors provide some tentative pathophysiologic mechanisms that could link the increased incidence of PD among individuals with rosacea and the reduction of PD incidence with tetracycline, namely, through the action, involvement or mediation of matrix metalloproteinases. Although this link may very well be true, what is needed at this time is for another cohort to replicate the findings of Egeberg et al, as they suggest. In addition, their intriguing finding that increased tetracycline use is associated with a small but appreciable reduction in the risk of PD should be further explored," writes Thomas S. Wingo, M.D., of Emory University, Atlanta, in a related editorial.

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