The etiology of pd is predominantly genetic

G. Xiromerisiou
Department of Neurology, Papageorgiou Hospital, Greece

Parkinson's disease is a neurodegenerative disorder that is traditionally believed to be caused by an interplay between genetic and environmental factors.Highly penetrant mutations producing rare monogenetic forms of Parkinson's disease have been discovered in genes such as SNCA, Parkin, PINK1, DJ1, LRRK2, VPS35. Several other unique variants with incomplete penetrance have been discovered in LRRK2 and GBA. A simple estimation of an overall heritability of Parkinson's disease, taking into account the aforementioned genes, explains only 30% of familial and 3-5% of sporadic cases.The missing heritability of familial Parkinson's disease is estimated that will be discovered soon with the new whole genome approaches as with the case of VPS35 gene. In terms of sporadic disease, numerous risk loci have been associated with PD through genome wide association studies. The following use of meta analysis of several data sets identified or confirmed 28 independent disease associated risk loci. The effect sizes of each of these loci are individually modest however the risk conferred by these in a certain individual can be large.Forthcoming GWAs with more comprehensive approaches will help resolving the genetic architecture of this disorder in the near future.On the other side, large epidemiological studies have revealed numerous environmental factors that are implicated in the etiology of Parkinson's disease. Interestingly, recent studies have shown that the association between many of these factors and Parkinson's disease may be affected by genetic factors. Therefore, the genetic component seems to be the strongest in the etiology of Parkinson's disease.