Conclusions Severe illness and more aggressive management were major risk factors for acute stroke. Traditional vascular risk factors and Caucasian ethnicity were risk factors for ischaemic stroke, while Hispanic or black ethnicity, higher PaO2, and ECMO were significant risk factors for haemorrhagic stroke.

Objectives Previous studies have reported altered gut microbiome (GM) composition in association with motor and non-motor symptoms in Parkinson’s disease (PD). Only a few prior studies considered the influences of PD medications, namely oral therapies, on the GM. We investigated the temporal stability of GM profiles from PD patients initiating device-assisted therapies (DAT) and in a separate cohort characterise GM influences on PD progression.

Methods Clinical data from validated questionnaires and stool samples from 74 PD patients and 74 healthy controls (HCs) were longitudinally evaluated, at t=0, 6 and 12 months. PD patients were sub-stratified as faster or slower progressors, inferred from levodopa equivalence dose and motor severity measures. Additionally, 19 PD patients receiving Deep Brain Stimulation or levodopa-carbidopa intestinal gel were longitudinally evaluated at t=0, 6 and 12 months post-therapy initiation.

Results Persistent underrepresentation of short-chain fatty-acid-producing bacteria, Clostridium XVIII, Butyricoccus and Fusobacterium was apparent in PD patients compared to HCs. No persisting GM profiles were recognised between faster and slower progressing patients, although predictive modelling supported the use of GM profiles to assist in defining PD progression. Our previous findings of acute GM changes in response to DAT initiation were not sustained at 6 and 12 months, although differing microbiota profiles persisted following DAT initiation.

Conclusions We present the largest longitudinal GM study in PD patients showing persistently altered GM profiles indicative of underrepresentation of short-chain fatty-acid-producing bacteria. DAT’s were found to exert acute variable influence on the GM that didn’t persist over time.