Evaluation of a gene therapy approach in a preclinical model of Parkinson's disease

AIM

Using PET imaging with [18F] 6-FMT as a quantitative functional readout of dopamine metabolism

METHODS

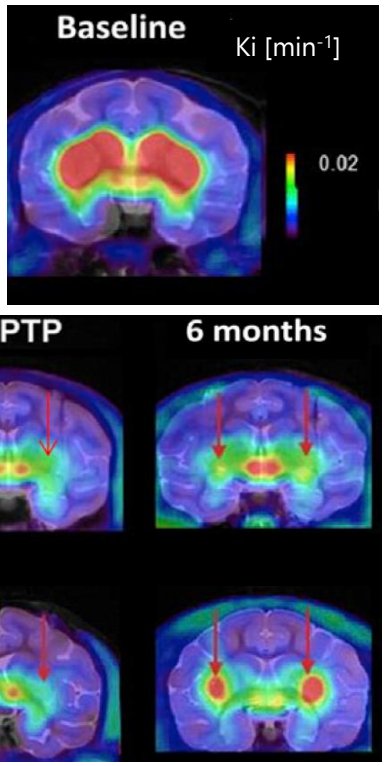
- **MPTP intoxicated animal model of Parkinson's disease**
- **Local lentivirus vector-mediated overexpression of three genes involved in dopamine synthesis (TH, AADC, CH1)**
- **Quantitative PET imaging with [18F] 6-FMT, a substrate of AADC, for functional readout of dopamine metabolism**
- **Post-mortem assessment of dopaminergic levels**

RESULTS

- **Recovery of AADC function seen by PET imaging**
- **Dopamine restoration in PD treated animal model**

CONCLUSION

- **Efficacy of an enhanced dopaminergic lentiviral vector using early and non invasive TEP imaging**



[18F] 6-FMT PET images sections in one representative animal at baseline and in one representative animal from each treatment group (CONTROL and GENE THERAPY) following MPTP intoxication and at 6 months post-gene therapy administration. Images are presented with scale bars for tracer binding intensity.

Aron Badin et al., Mol Ther Methods Clin Dev. 2019

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