**Non-invasive Parameter for Assessing Urine Flow Rate in Frequency Domain to Differentiate Detrusor Underactivity with Bladder Outlet Obstruction in Male**

Li Rui1, Gammie Andrew2, Zhu Quanmin1, Nibouche Mokhtar1

1. Faculty of Environment and Technology, University of the West of England, Frenchay Campus, Coldharbour Lane, Bristol, BS16 1QY, UK2. The Bristol Urological Institute, Southmead Hospital, Bristol, BS10 5NB, UK

To differentiate Detrusor underactivity (DU) with bladder outlet obstruction (BOO), we have assessed free urine flow in frequency domain, and proposed median power frequency (MPF) as a potential urodynamic indicator for diagnosing DU.

As a continuation research from the previous result1,we have quantitively analysed the difference of high frequency component between DU and BOO flow curve using Fourier transform, to calculate median power frequency. By applying an Elliptic filter with bandpass frequency of 0.3Hz-1Hz on the UFR curve, little drops, some of artefacts and flow mainly voided by detrusor contraction have been filtered off. Then MPF was calculated in whole filtered curve and first/second half of filtered curve.

When comparing DU group with BOO group by using MPF in second half curve, a significant different was found with P value<0.001, 67% sensitivity and 70% specificity.

Reference:

1. Li, R., Gammie, A., Zhu, Q. and Nibouche, M. (2016) Mathematical modelling analysis of male urine flow traces. In: International Continence Society conference 2016.