11C Metomidate Imaging in Primary Aldosteronism

11C Metomidate imaging is a Positron Emission Tomography (PET) scan used to assess the adrenal glands. The adrenal glands are part of the endocrine system which sit above the kidneys and excrete hormones to regulate the body's function, including blood pressure control.

**Diagnosis**

Diagnosis of PHA is generally confirmed by using a series of blood tests, diagnostic Computed Tomography (CT), adrenal venous sampling (AVS), and dexamethasone suppression testing. Currently AVS is the gold standard for diagnosing PHA, it is an invasive technique performed by a highly skilled radiologist to measure the hormone production of each adrenal gland. An adrenal gland found to be over producing aldosterone can indicate an adenoma. AVS can be inconclusive as a result of failure to access the adrenal vein, intermittent production of aldosterone or patient incompatibility.

11C Metomidate imaging is a less invasive technique to help diagnosis and patient management, and has been shown as a more effective technique to AVS in identifying unilateral aldosterone-producing adenomas (Powlson et al, 2014).

**Treatment**

A proportion of the patients with Conn’s syndrome can be cured with surgery, meaning no more requirement blood pressure medication. Other patients who do not achieve a cure following surgery could benefit from having a reduced, more stable blood pressure control or a reduction in medication.

**Limitation**

As 11C Metomidate is a short acting tracer, this scan can only be done where there is a local cyclotron for production. As the dose of 11C Metomidate tracer decreases rapidly with time, patients that arrive late may not be able to have the study done due to insufficient activity. The production of 11C Metomidate is a complex chemical process, which takes approximately 30-45min to produce, and pass quality control testing. Sometimes repeat procedures may not be possible on the same day due to timings and availability.

**Conclusion**

Small studies have shown that 11C Metomidate imaging is an useful non invasive method to diagnose and manage patients with primary aldosteronism.

**References**