

# The use of $^{64}\text{Cu}$ -DOTATATE somatostatin receptor imaging in neuroendocrine tumors: experience from 250 patients at Copenhagen ENETS Center of Excellence.

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TAP TO GO BACK  
TO KIOSK MENU

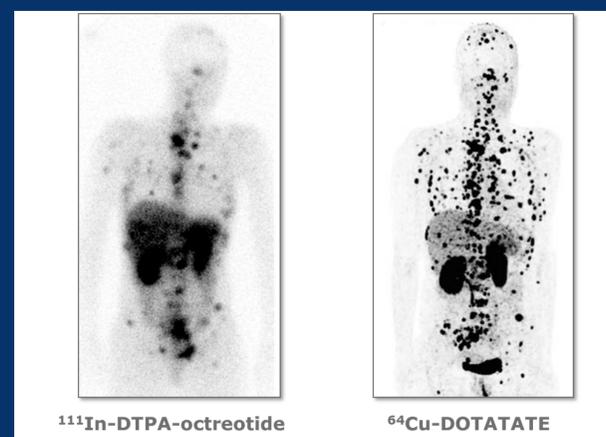
## Background

In 2012 we introduced the somatostatin receptor imaging ligand  $^{64}\text{Cu}$ -DOTATATE. A potential benefit compared to SPECT tracers and  $^{68}\text{Ga}$ -labeled PET tracers included a better spatial image resolution. In addition, when compared to  $^{68}\text{Ga}$ -labeled tracers, the longer half-life of  $^{64}\text{Cu}$  (13h) compared to  $^{68}\text{Ga}$  (1h) could potentially make logistics easier, in particular in high-throughput centers. Here we present our experience having scanned more than 250 neuroendocrine tumor patients.

## Material & Methods

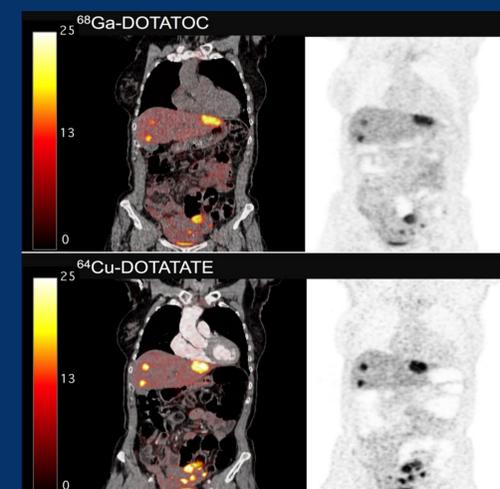
Description of performance and practical workflow based on the first 250 patients. Data summarized both results obtained as part of our routine as well as from the clinical protocols for evaluation of diagnostic performance we have performed until now

## Results



Head to head comparison between  $^{64}\text{Cu}$ -DOTATATE and  $^{111}\text{In}$ -DTPA-octreotide in 112 patients demonstrated twice as many lesions (1,213 vs. 603) and additional organs involved in 40 of 112 patients. (Data published in J Nucl Med 2015; 56: 847-54).

## Results



Head to head comparison between  $^{64}\text{Cu}$ -DOTATATE and  $^{68}\text{Ga}$ -DOTATOC in 59 patients demonstrated the same patient based sensitivity and specificity but  $^{64}\text{Cu}$ -DOTATATE was superior in lesion detection (Data published in J Nucl Med 2017; 58: 451-7).

## Conclusion

$^{64}\text{Cu}$ -DOTATATE is a sensitive and convenient SRI tracer for routine use in a NET center.

## Results

The PET tracer  $^{64}\text{Cu}$ -DOTATATE is produced in batches for up to ten patient doses. These batches are released in the morning and the product has an approved shelf life of 24h. Accordingly, for practical purposes the patients may be scanned during the day and evening on the day of tracer production. Due to the long half-life, patients showing up late are no longer a major concern with regard to PET tracer use. Compared to  $^{68}\text{Ga}$ -labeled tracers, which we used previously and that typically are produced for 1-2 patients at a time, we have freed up radiochemist time at our department. Imaging is typically performed 1h after injection of 200 MBq of  $^{64}\text{Cu}$ -DOTATATE but based on our first-in-human study, we have documented that image acquisition may be performed any time between 1 and 3h post injection. With regard to diagnostic performance, we have undertaken two head-to-head comparison studies with  $^{111}\text{In}$ -DTPA-octreotide and  $^{68}\text{Ga}$ -DOTATOC, respectively. On a lesion basis,  $^{64}\text{Cu}$ -DOTATATE was superior both to  $^{111}\text{In}$ -DTPA-octreotide and  $^{68}\text{Ga}$ -DOTATOC. No major side-effects have been observed in the first 250 patients at our Center.