

Global Mo-99 and I-131 Radioisotope production impacted by delay of Belgian BR2 Reactor restarting from scheduled maintenance

Many of you will be aware of current problems with the UK's supply of radioisotopes from Europe. This is because of a delay in Belgian nuclear reactor (BR2) restarting from scheduled maintenance. On the 8th November, Nuclear Medicine Europe and the Emergency Response Team issued a statement saying that Mo-99 (the parent isotope of technetium-99m) supply disruptions are anticipated **beginning from the end of week commencing the 14th November 2022 and both Mo-99 and I-131 shortages are expected until at least the third week of November.** The exact timing is unclear, this advice applies both now and for future shortages should these arise.

During this period (possibly most of November 2022), the ABS recommends that you discuss the radioisotope shortage with the members of your clinical team and your patients. You may consider the following measures **after a documented discussion with the patient on a case by cases basis:**

- 1. If you routinely use a radioisotope tracer as part of your standard intra-operative method of sentinel lymph node identification:**
 - Consider postponing the surgery until supply has resumed (likely 3 weeks) with or without bridging endocrine therapy as appropriate.
 - Consider using blue dye only but inform the patient of the reduced sensitivity of finding sentinel lymph nodes (8.6% vs 5.9% for blue-dye and isotope – 2012 World J Surg 36(9):2239-2251).

Other techniques can be used for sentinel node biopsy, but need training and/or equipment and set up of new pathways with the clinical team so are difficult to adopt at short notice. For example:

- Blue dye and indocyanine green (if available in your hospital - may show similar sentinel lymph node localisation rates as blue-dye and radioisotope – 2020 JCO Global Oncology 6: 1225-1231).
- Magtrace (<https://www.nice.org.uk/guidance/mtg72/documents/450>)
- Pre-operative localisation of sentinel lymph nodes with intradermally injected microbubbles and contrast enhanced ultrasound with clip/ other marker and localise before surgical removal could also be considered (concordance with sentinel lymph nodes found with blue-dye and isotope 93% - 2013 EJSO 39: 760-765).

2. If you routinely use other tracers/ techniques such as Magtrace or indocyanine green as part of your standard intra-operative or pre-operative method of sentinel lymph node identification:

- Continue with your standard localisation technique.

ABS Clinical Practice & Standards Committee

10th November 2022