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Title: *Comparing the Percentage of Sestamibi Bound to Technetium 99 from First Elutions to All Other Elutions*

Objective:
To determine if the first elutions have lower quality control binding percentages when used to prepare sestamibi kits.

Methods:
A retroactive single center review of quality control data for sestamibi kits compounded from May 1, 2018 to July 31, 2018 was performed.

Inclusion criteria: the compounded kit must be for sestamibi.

Exclusion criteria: kits that were made with 2 or more elutions.

In total, 106 kits prepared form first elutions and 343 kits prepared from non-first elutions were analyzed. The primary outcome being examined if the first elution had any impact on quality control percentages. Secondary outcomes included if different pharmacists had an impact on the quality control percentages, and if the individual month added variability in quality control.

Results:
In the first elution kits the mean percent bound was 95.117% (range 90.464-98.664) Â± 1.74 with a median of 95.586% for 106 kits. For all other kits, the mean was 97.548% (range 90.606-99.417) Â± 0.926 with a median of 97.65% for 343 kits. The t-value was calculated to be zero with a p-value equal to 1. None of the secondary endpoints were statistically significant.

Conclusion:
For the primary outcome, no statistically significant difference between the first elution kits and non-first elution kits' quality control percentages were found. The secondary outcomes also resulted in no statistical significance. The first elution had negligible effect on binding potential of the radioactive material to the ligand, and therefore has no clinical significance. This study supports the current policy of using eluants as the nuclear pharmacist deems appropriate with no specific policy regarding the use of first elutions to compound sestamibi kits.