Introduction:
• Sentinel lymph node biopsy (SNLB) is standard treatment in breast cancer surgery, used to assess tumour metastasis.
• Current gold standard for SLNB is radioisotope (RI) and blue dye (BD) injected peritumourally. Risks of anaphylaxis, skin staining, & radiation.
• Fluorescence Imaging with Indocyanine Green (ICG) is safe and effective alternative

Methodology:
• PROSPERO ID: CRD42019129224
• Medline, Embase, Scopus, and Web of Science were searched
• MESH terms: ‘Surgery’ AND ‘Lymph node’ AND ‘Near infrared fluorescence’ AND ‘Indocyanine green’
• Articles containing raw data on sentinel node identification rate included

Results:
The odds of identifying a sentinel node using ICG is significantly higher as compared to BD (OR 8.89, CI 5.04-15.69).

Odds Ratio of ICG vs BD

Sensitivity and Specificity of ICG
ICG is 95% sensitive (CI 91-98%) but only 2% specific (CI 1-5%) at mapping metastatic sentinel nodes.

Odds Ratio of ICG vs RI
The odds of identifying a sentinel node using ICG is not significantly different as compared to RI (OR 2.58, CI 0.35-19.08).

Sensitivity and Specificity of RI
RI is 96% sensitive (CI 82-99%) but only 17% specific (CI 2-63%) at mapping metastatic sentinel nodes.

Conclusions:
• ICG is significantly better at identifying sentinel nodes than BD, and equivalent to RI
• Both ICG and RI are very sensitive but neither is specific at demonstrating which nodes contain metastasis
• RI is slightly more accurate than ICG in identifying which sentinel nodes have cancer, but as SLNB is not a cancer guiding technology the significance of this is unknown
• ICG is a safe and good alternative to using RI +/- BD in SLNB in breast cancer surgery

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