

Surgery guided by indocyanine green enhanced fluorescence

Clinical question, PICOS and Search Strategy

Setting: Lymphatic Mapping in UpperGI Surgery

Clinical question: **Would indocyanine green - enhanced fluorescence surgery, rather than surgery without fluorescence - improve lymphadenectomy/lymphnode mapping and retrieval in patients undergoing esophagogastric surgery:**

- Minimally Invasive esophagectomy with esophagogastric anastomosis
- Minimally Invasive total or partial gastrectomy

P = Population or Patient group: patients who underwent laparoscopic or robotic esophagogastric surgery for esophageal, esophagogastric junction or gastric cancer

I= Intervention: esophagectomy with esophagogastric anastomosis and gastrectomy (laparoscopic, robotic) with fluorescent properties of indocyanine green (ICG)

C= Comparator: open esophagectomy with esophagogastric anastomosis and open gastrectomy without fluorescent properties of indocyanine green (ICG)

O = Outcomes:

Primary outcomes of interest were identification rate, sensitivity, specificity, and the presence of lymphnode of patients with esophageal/gastric cancer. Secondary outcomes: mortality, morbidity, long term outcomes

S = Study design

- o Primary research: randomised controlled trials (RCTs), controlled cohort studies, case control studies
- o Secondary research: systematic reviews and meta analysis

Keyword A	esophageal cancer or esophagogastric junction cancer - gastric/stomach				
Keyword B	indocyanine green (ICG) fluorescence lymphography/lymphatic mapping				
Keyword C	minimally invasive surgery - Ivor Lewis esophagectomy - laparoscopic gastrectomy				
Search strategy	indocyanine green (ICG)	OR	Near-infrared fluorescence/ sentinel lymph node detection/ gastric cancer	O R	Fluorescence Lymphangiography/Lymphatic mapping
AND	esophageal cancer or esophagogastric junction cancer - gastric/stomach	OR	minimally invasive surgery - Ivor Lewis esophagectomy - laparoscopic gastrectomy		

Search methods for identification of studies: all sources searched, including: databases, trials registers, websites and grey literature; all types of studies included: case series, clinical trials, review and meta-analysis - **English language only**

Search Strategy

Pubmed

("Gastric Surgery"[Mesh] OR "Gastrectomy"[Mesh] OR gastric-surgery* OR *gastric-resect* OR "Esophageal Surgery"[Mesh] OR esophagect* OR esophagogastrectomy* OR ("Stomach"[Mesh] OR

"Gastric Cancer"[Mesh] OR "Esophagus"[Mesh] OR "Esophageal Cancer"[Mesh] OR esophago-gastric* OR "Early gastric cancer" OR EGC*) AND ("surgery"[Subheading] OR surger* OR surgeo* OR surgi* OR resect* OR "Laparoscopy"[Mesh] OR laparosc* OR laparoendosc* OR celioscop* OR "Minimally Invasive Surgical Procedures"[Mesh] OR "Robotic Surgical Procedures"[Mesh])) AND ("Indocyanine Green"[Mesh] OR "Fluorescence"[Mesh] OR indocyan* OR indo-cyan* OR fluorescen* OR fluorescein* OR ICG OR "Coloring Agents"[Mesh] OR "Coloring Agents"[Pharmacological Action] OR colouring OR coloring OR dye* OR "Fluorescent Dyes"[Pharmacological Action] OR "Fluorescein Angiography"[Mesh]) AND ("Lymphadenectomy"[Mesh] OR "Lymphatic Mapping"[Mesh] OR "Sentinel Lymphnode"[Mesh] OR "Lymphatic Basin" OR sentinel-lymph* OR lymphnod* OR lymph-nod* OR lymphectomy* OR "Lymphography"[Mesh] OR lymphogr*)

Embase

('gastric surgery'/exp OR 'gastrectomy'/exp OR 'esophageal surgery'/exp OR 'esophagogastrectomy'/exp OR gastric resect* OR 'esophagect*' OR (('stomach'/exp OR 'gastric cancer'/exp OR 'esophagus'/exp OR 'esophageal cancer'/exp OR esophago-gastric OR early gastric cancer*) AND ('surgery':lnk OR surger* OR surgeo* OR surgi* OR resect* OR 'laparoscopy'/exp OR laparosc* OR laparoendosc* OR celioscop* OR 'minimally invasive surgery'/exp OR 'robotic surgical procedure'/exp))) AND ('indocyanine green'/exp OR 'fluorescence'/exp OR indocyan* OR 'indo cyan*' OR fluorescen* OR fluorescein* OR icg OR icgfa OR 'coloring agent'/exp OR colouring OR coloring OR dye* OR 'fluorescent dye'/exp OR 'fluorescence angiography'/exp) AND ('lymphadenectomy'/exp OR 'lymphatic mapping'/exp OR 'sentinel lymphnode'/exp OR 'lymphatic basin'/exp OR sentinel-lymph* OR lymphectomy* OR lymphography* OR 'sentinel lymphnode'/exp OR lymphnod* OR 'lymphography'/exp OR lymphogr*)