T3 Cancer of the Stomach

## 1 Anatomy

Food moves from the throat

esophagus

stomach

small bowel (jejunum)

We’ll start with reviewing some anatomy about how the body digests food.

Food moves from the throat to the esophagus, and from there to the stomach.

From the stomach, food moved through a valve called the pylorus into the small intestines

## 2 Genetic Testin

Patients with stomach adenocarcinoma OR those with strong family history of stomach cancer (or other cancers) should consider genetic counseling to determine whether or not testing would be helpful. In some families, a gene can be passed on which causes and increased susceptibility to stomach cancer

## 3 Hereditary Diffuse Gastric Cancer

Inherited condition in which an altered copy of the CDH1 gene is passed from generation to generation Presence of the gene can be detected by genetic testing Affected person can pass the gene to (on average) half of their children Affected persons carry the CDH1

## 4 Hereditry Diffuse Gastric Cancer

Affected individuals have microscopic cancers beginning to form in the top layer of the stomach at an early age Majority of affected individuals will develop visible cancer by age 40 By age 80, 70% of men and 56-83% of women are estimated to be at risk to develop visible cancer however some recent studies place this risk at 50%/33%

## 5 CDH1

CDH1 carriers with visible cancer are termed “clinically apparent” CDH1 carriers with clinically apparent cancers which are large enough to cause symptoms generally are likely to have spread to lymph nodes

## 6 HDGC

Prophylactic (preventive) gastrectomy is recommended for CDH1 carriers between ages 18-40 CDH1 carriers who undergo prophylactic gastrectomy rarely have cancer spread to lymph nodes Prophylactic surgery requires total gastrectomy (removing all of stomach)

## 7 CH1 and Family History

Among patients with CDH1 mutation and a family history of gastric cancer who undergo preventive total gastrectomy, 90% have early stages of gastric cancer

Among patients with CDH1 mutation without a family history of gastric cancer, 2 out of 3 (67%) are estimated to have early stages of gastric cancer

## 8 Treatment Options

* Total Gastrectomy
  + Surgical removal of all of stomach
  + Permanent alteration in eating
  + Requires Small Frequent meals

## 9 “Sandwich” Chemotherapy Drugs

**Total Gastrectomy**

* Surgical removal of all of stomach
* Permanent alteration in eating
* Requires Small Frequent meals
* Feeding jejunostomy (temporary)

**Surveillance**

* Endoscopy every 6-12 months
* Unknown how long this is required.

## 10 Layers of the Wall of the Stomach

If we look at the walls of the stomach, we see several layers:

- Mucosa - Inner layer  
- Muscle wall (muscularis)  
- Lymph nodes located in fat outside the muscle

## 11 Early Stage Cancers

Early-stage cancers are those that are small and have not grown very far into the wall of the stomach.

Cancers start on the very inside of the layer called the mucosa

## 12 Locally-advanced Cancers

Over time, cancers can grow into the muscular wall

Locally-advanced cancers are those that have grown through the wall of the stomach

## 13 Lymph Nodes

In some cases, cancer cells can break off from the main tumor and spread to lymph nodes

If the lymph nodes contain enough cancer cells, they can be seen on CT scans or PET scans

## 14 T Stage

Cancers are categorized based upon the thickness of the tumor, known as the T stage

T1 tumors are early stage, and T4 tumors more advanced

## 15 N Stage

Cancers are categorized by whether there is spread to the lymph nodes.

* **N0** cancers have not spread to the lymph nodes
* **M1** cancers have spread to the lymph nodes.

## 16 M Stage

Some cancers spread to other parts of the body

* **M0** cancers have not spread to other parts of the body
* **N1** cancers have spread lungs, liver, or bone

M1 cancers are considered Stage 4

## 17 PET scan

* Similar to CT scan
* Tracer lights up areas of cancer
* Preparation: Water (only) for 6 hours before

In some cases, the PET scan is not performed until a CT scans bas been done.

## 18 Endoscopic Ultrasound

* Similar to upper endoscopy (EGD)
* Ultrasound probe in scope
* Evaluates T stage of cancer

Endoscopic ultrasound is most helpful in early stage cancers.

## 19 Laparoscopy

* Some cancers can spread inside the abdomen
* Areas of spread can be very small (grain of rice)
* Laparoscopy can detect spread inside the abdomen

Not all patients with stoach cancer need a laparoscopy.

## 20 Laparoscopy

A laparoscopy is performed under a general anesthetic.

* Several incisions 1/4” long
* Telescope looks inside the abdominal cavity.
* Biopsies can be performed.

## 21 Treatment Plan

- Superficial (T1) Endoscopic Therapy  
  
- Localized (T1b/T2) Surgery  
  
- Locally-advanced (T3/N1) Chemo Surgery  
  
- Metastatic (M1) Chemotherapy

This table summarizes four different treatment categories:

* Superficial cancers are T1 and can be treated by endoscopic therapy without the need for surgery
* Localized cancers are T1b or T2 and are frequently treated by surgery alone without the need for chemotherapy or radiation
* Locally-advanced cancers are T3 or N1 and are usually treated with chemotherapy prior to surgery
* Metastatic cancers are M1 and are treated primary by chemotherapy.

## 22 Locally-advanced Adenocarcinoma

“Sandwich” chemotherapy before and after surgery:

Chemotherapy (8 wks) Surgery Chemotherapy (8 wks)

Two different drug combinations:

* FLOT (more effective)
* FOLFOX (better tolerated)
* ECF (less commonly used)

## 23 “Sandwich” Chemotherapy Drugs

**FLOT**

* 5-FU
* Leucovorion
* Oxaliplatin
* Taxotere

**FOLFOX**

* 5-FU
* Leucovorin
* Oxaliplatin

## 24 Tumor Biomarkers

Surface proteins found on cancers which may show that additional drugs may be helpful:

* HER-2 Herceptin can be helpful
* PD-L1 Immunotherapy can be helpful
* MMR Immunotherapy can be helpful

Biomarkers reported in a separate pathology report

Your medical oncologist will review these with you

## 25 Chemotherapy

Chemotherapy drugs are administered intravenously.

There are several options for intravenous access:

* Peripheral IVs in the hand
* PICC line (Peripheral Inserted Central Catheter)
* Central Venous Port  
  [Central Venous Port](lci_cvport.htm)

## 26 Restaging

CT or PET scan performed after preoperative therapy

* Surgery performed after restaging
* Timing depends upon recovery from therapy

## 27 Additional Slides

[Nutrition Slideshow](lci_nutrition.htm)  
[Gastrectomy Slideshow](lci_gasgtrectomy.htm)  
[Central Venous Port](lci_cvport.htm)