



A Knowledge Medicine Approach to Cancer Care

The Promise of Personalized Medicine

2001



2011



What Do We Know Now

Feb 2001

- 60 completed genomes
- 1,500 Genes in OMIM DB

Feb 2011

- Near 2,000 genomes
- >13,000 Genes in OMIM DB
- >700 GWAS projects underway

“...the once-hypothetical medical benefits of individual genome sequencing are beginning to be realized in the clinic.” -- Francis Collins, Director of the NIH

- What Defines Clinically Important INDIVIDUALIZED Information?

Stomach Cancer

Worldwide Statistics (2008)

- #4 in incidence rate (1M, 8%)
- #2 in deaths (737K, 10%)
- 50% in East Asia

Current Knowledge

- Early Detection is difficult
- Genetic Predisposition (CDH1) and Risk Factors (H. Pylori, diet) are known
- Current treatment is hard (gastrectomy + chemoradiation) – 65% complete
- New biomarkers are promising for identifying new therapies (HER2-Herceptin)

Finding the Latest About Gastric Cancer



stomach cancer

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Learn About **Stomach Cancer** Symptoms & Treatments & Prevention.
www.symptomfind.com

[Gastric cancer](#)



Gastric cancer is **cancer** that starts in the stomach. Symptoms: Abdominal pain; Dark stools; Difficulty swallowing, particularly difficulty that increases over time; Excessive belching; General decline in health; Loss of...

[Causes](#) - [Symptoms](#) - [Tests](#) - [Treatment](#) - [Prognosis](#) - [Complications](#) - [Prevention](#)
www.ncbi.nlm.nih.gov

[Stomach Cancer Symptoms, Causes, Stages and Gastric Cancer ...](#)

Mar 6, 2011 ... What are risk factors and causes of **stomach cancer**? ... What are some of the nutritional concerns of **stomach cancer** patients? ...
[What are symptoms of stomach cancer? - What are risk factors and causes of ...](#)
www.medicinenet.com/stomach_cancer/article.htm - [Cached](#) - [Similar](#)

[Stomach cancer - Wikipedia, the free encyclopedia](#)

Gastric cancer, commonly referred to as **stomach cancer**, can develop in any part of the stomach and may spread throughout the stomach and to other organs; ...
[Signs and symptoms](#) - [Causes](#) - [Diagnosis](#) - [Management](#)
en.wikipedia.org/wiki/Stomach_cancer - [Cached](#) - [Similar](#)

[Stomach Cancer Symptoms, Causes, Diagnosis, and Treatment](#)

Learn more about **stomach cancer** including the types, causes, symptoms, risk factors, and treatments.
www.webmd.com/cancer/stomach-gastric-cancer - [Cached](#) - [Similar](#)

[Stomach cancer - MayoClinic.com](#)

Stomach cancer — Comprehensive overview covers signs, symptoms, causes and

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20-50: AMCs, News

Page 7 & 8: 23&Me, Navigenics

Effective Transfer of Best Practices through Collaborative Medicine

Gastroesophageal carcinoma

What is the best approach to treatment for a 68 year old man in good health with a 7 year history of dyspepsia who now presents with difficulty swallowing solids without liquids and is found to have a T2N1 adenocarcinoma of the GE junction by endoscopy and EUS? A PET scan shows only uptake at the GE junction with no evidence of metastatic disease.

MD from San Antonio, TX



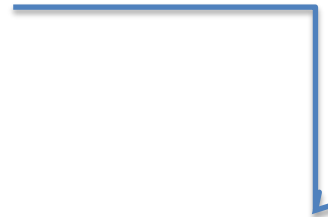
- 11 Informal consultations
- 1 Expert
- 5 Community physicians
- 3 Cancer centers/hospitals
- 2 International (S.Am.)

Standard of care would be neo-adjuvant chemotherapy followed by repeat evaluation and surgery. Another option would be to weekly Carbo and weekly Taxol as per 2010 ASCO presentation abstract# 4004

To my knowledge the only Ph III trial comparing chemotherapy vs chemoradiation for operable GEJ Ca is the German POET trial (Stahl M. JCO 2009; 27:851),

I think one approach to this case would be to start with chemotherapy based on Magic trial (TCF) 3 cycles followed by surgery and then 3 more cycles of chemotherapy.

ECF pre/post op as per MAGIC trial has good results according to the trials, and I find it to be very tolerable for most, with very good efficacy. They did not do irradiation in the MAGIC trial, but there is a study ongoing incorporating XRT into the protocol, using CIV 5FU without the epi/CDDP



And the Molecular Knowledge?

Another stomach cancer case: 74 year-old male patient diagnosed with T3N2M0 gastric adenocarcinoma underwent total gastrectomy with D1 lymph node dissection. Two cycles of 5FU/LV chemotherapy were administered, followed by capecitabine + IMRT radiation therapy. Biomarkers for CDH1, HER2, or other genes of interest were not determined.

- Genetic markers were not seen as affecting the treatment plan post-surgery
- Pharmacogenomic markers also not seen as important factors in determination of treatment plan

Patient experienced toxicity with chemotherapy and was unable to finish treatment plan.

Although potentially informative, molecular information applied to individuals is not a common part of treatment planning.

Enabling Individualized Care

- A Collaboration Platform can:
 - Inform Physicians about additional treatment options through peer interactions and expert guidance
 - Enable Physicians to take clinically-relevant actions and understand the value of molecular information for individual patients
 - Achieve better outcomes through the support of collective wisdom in medical decision making for their patients