

Clinical Research Trials for Pancreas Cancer

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Jefferson[™]
University Hospitals

What does it take to develop one new cancer drug?

- One billion dollars and 10-15 years
- Drug discovery (5000-10,000 compounds)
- Preclinical laboratory work (250 compounds)
- Clinical trials in humans
- FDA submission and approval

How have cancer drugs changed?

1970- 1990's

- Cytotoxic
- Non-specific
- Intravenous toxins
- Highly toxic
- DNA damaging

2000 and beyond

- Cytostatic
- More selective
- Oral/IV biologics
- Well-tolerated
- Targets the tumor and tumor environment



Why do we
need patient
participation
in clinical
trials?

Recently FDA approved oncology compounds

- Everolimus
- Bendamustine
- Sunitinib
- Sorafenib
- Nilotinib
- Ixabepilone
- Temsirolimus
- Lapatinib
- Velcade
- Imatinib
- Vorinostat
- Rituxan
- Panitumumab
- Lenalomide
- Dasatinib
- Decitabine
- Cetuximab
- Rituximab
- Trastuzumab
- Bevacizumab
- Denosumab
- Pazopanib
- Sipuleucel-T
- Eribulin
- Ofatumumab
- Ipilimumab
- Cabazitaxel
- Crizotinib

FDA approved oncology drugs 2012-2013

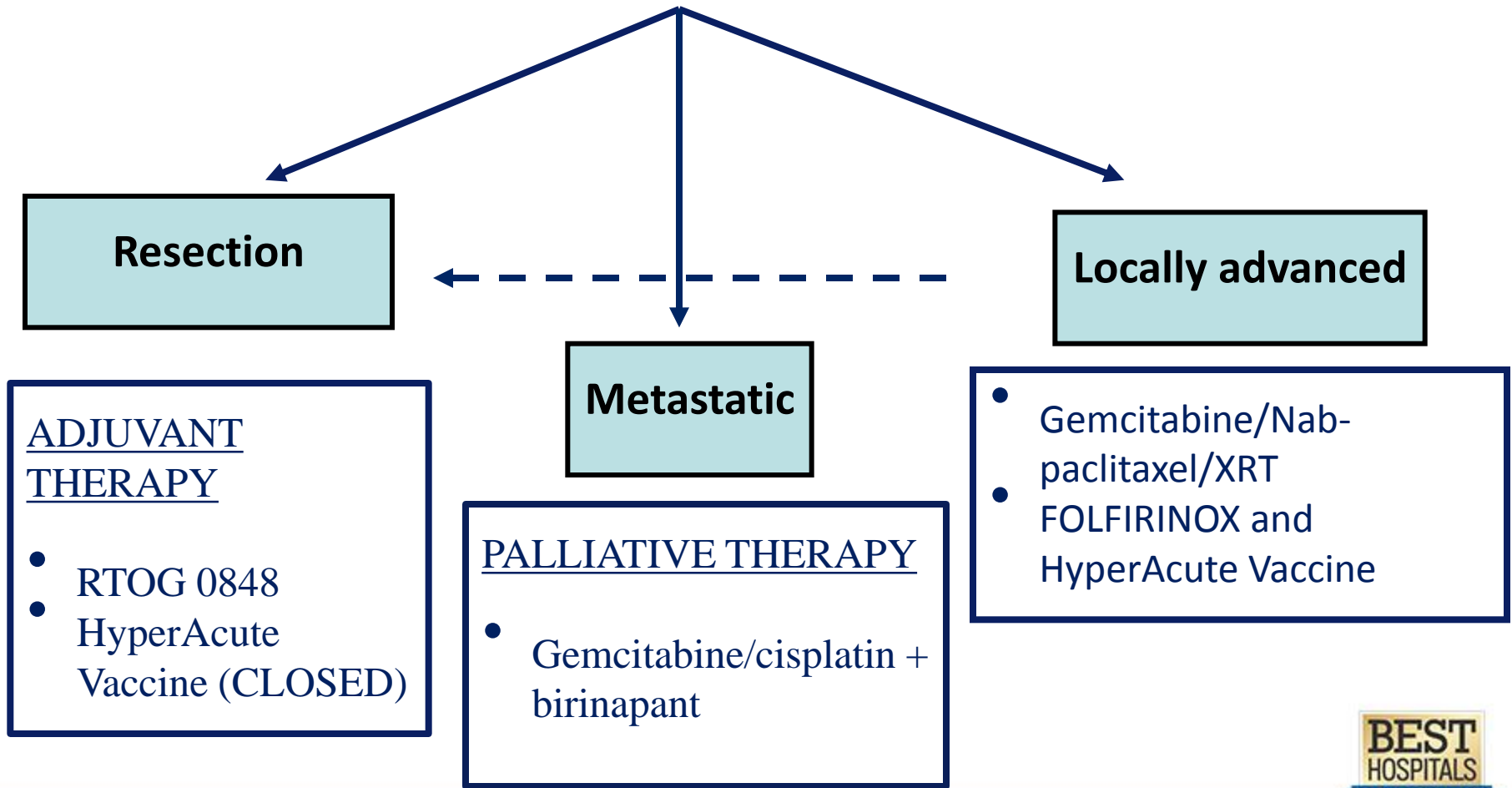
- Obinutuzumab
- Pertuzumab
- Nab-paclitaxel
- Afatinib
- Trametinib
- Dabrafenib
- Abiraterone
- Cabozantinib
- Vandetanib
- Omacetaxine
- Regorafenib
- Bosutinib
- Enzalutamide
- Ziv-aflibercept
- Carfilzomib
- Vismodegib
- Axitinib
- Ruxolitinib
- Brentuximab
- Vemurafenib

Barriers to Clinical Trial Enrollment

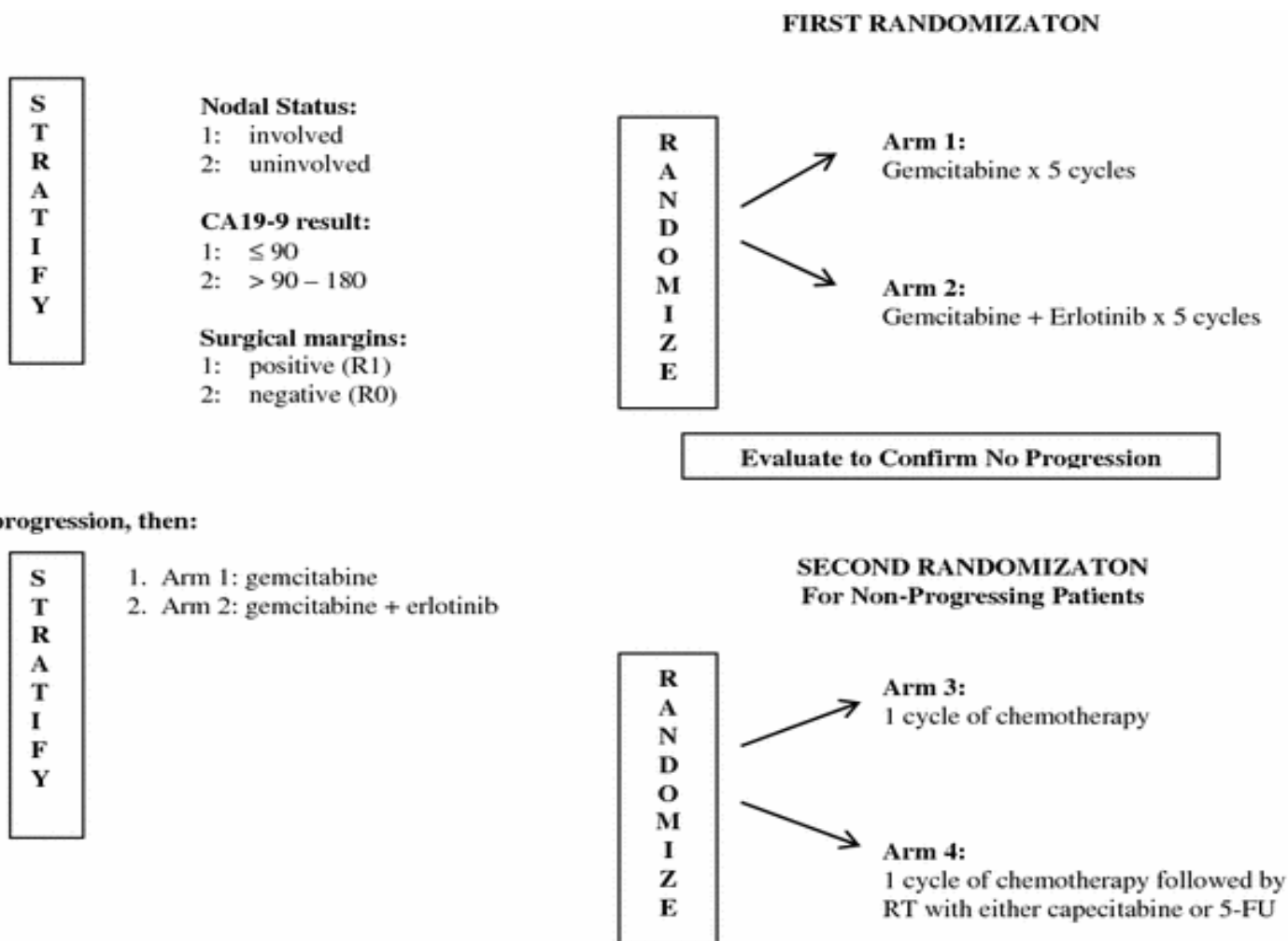
- Access
- Education
 - Patient perceptions
 - “guinea pig”
 - “I don’t want a placebo”
 - “Will my insurance cover this?”
 - MD perceptions
 - Too time intensive
 - Too much paperwork
- \$\$\$\$\$

ONLY ~ 10% of
all adult
cancer
patients
participate in
clinical trials!

Pancreatic Cancer



Adjuvant Phase III Trial-RTOG 0848

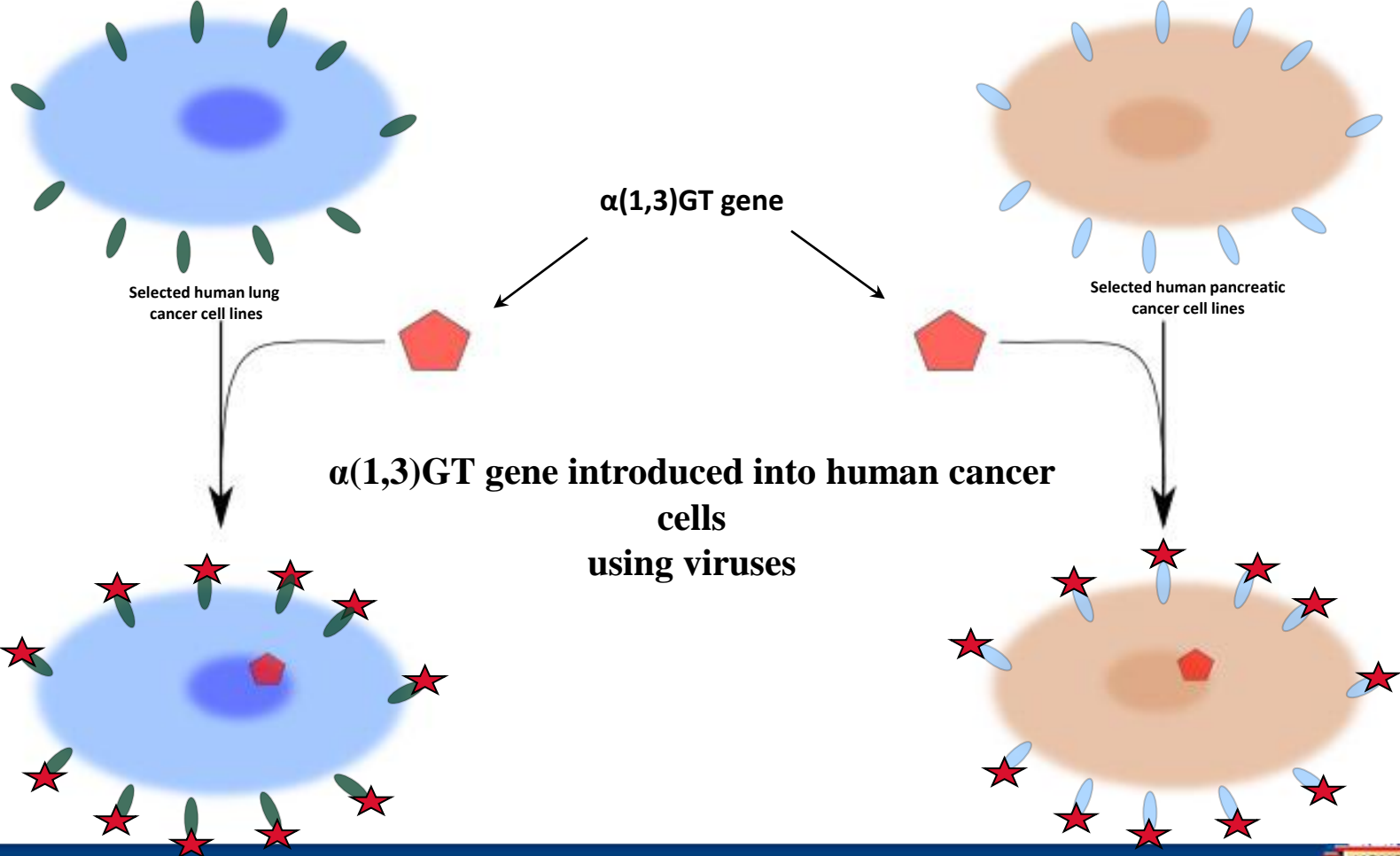


HyperAcute®-Pancreas immunotherapy

Adjuvant therapy (Gemcitabine alone or with 5-FU chemoradiation) with or without HyperAcute®-Pancreas (algenpantucel-L) immunotherapy in subjects who have undergone surgical resection

Principal Investigator: Harish Lavu, MD

HyperAcute[®] Technology



Locally Advanced Unresectable Pancreatic Adenocarcinoma



Gemcitabine and Nab-Paclitaxel as a Promising Combination

- Gemcitabine and Nab-Paclitaxel IV weekly x 3 with 1 week off

Patients with metastatic pancreas cancer receiving this doublet did better than the group receiving gemcitabine alone.



Upcoming Gem/Paclitaxel Trial for Locally Advanced Pancreas Cancer

	Cycle 1 (4 wks)	Cycle 2 (4 wks)	Tumor response evaluation/ rule out metastatic disease	CRT* (2 wks)	Cycle 3 (4 wks)	Cycle 4 (4 wks)	Tumor response/ resectability evaluation every two cycles
Gem	III.	III.		II	III.	III.	
Nab-paclitaxel	III.	III.			III.	III.	
CRT				30 Gy 3Gy/fx			



FOLFIRINOX as a Promising Regimen

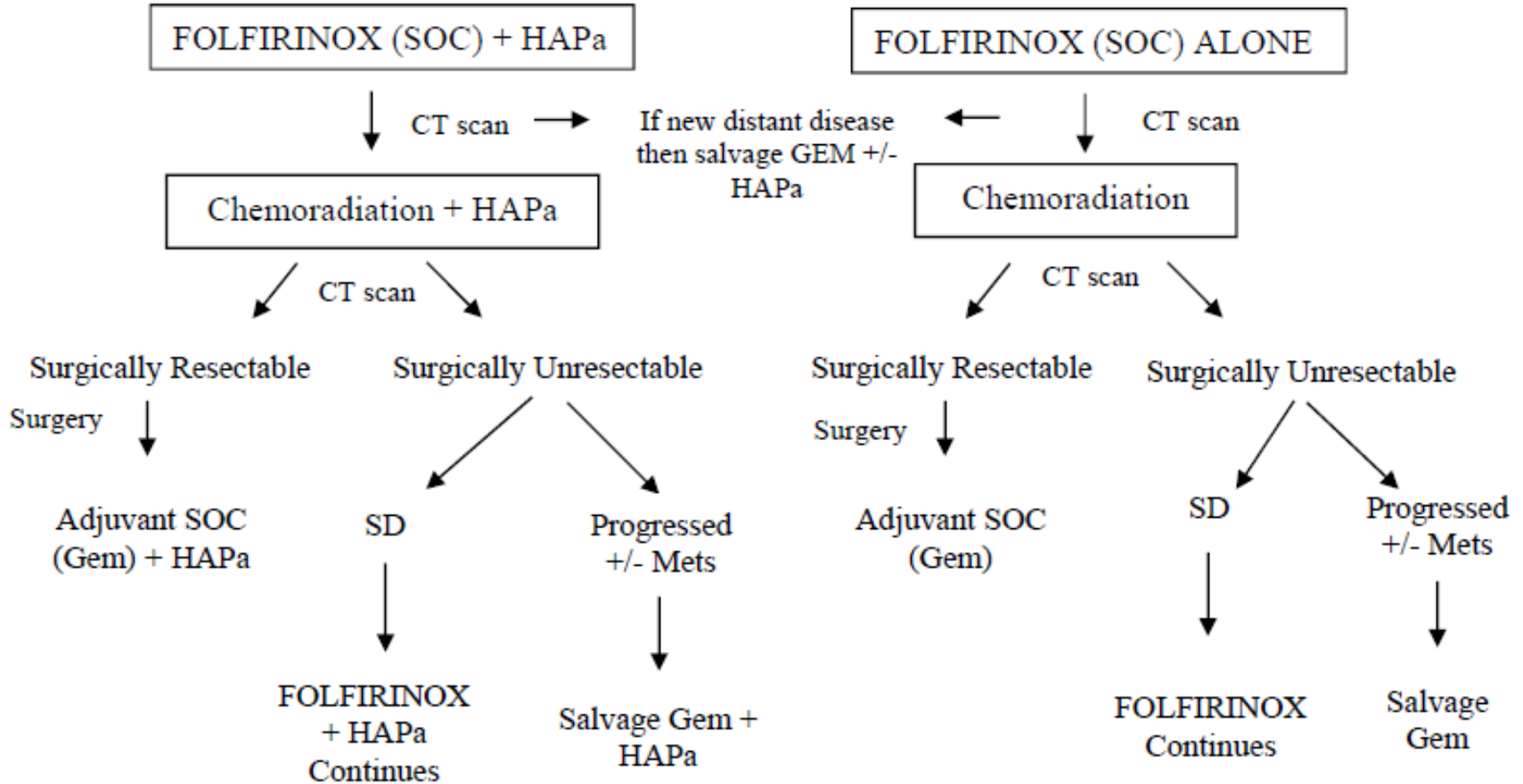
5-Fluorouracil
Oxaliplatin
Leucovorin
Irinotecan
IV every 2 weeks

Patients with metastatic pancreas cancer did better than the group receiving gemcitabine alone.



Open Trial of FOLFIRINOX With or Without HyperAcute®- Pancreas Immunotherapy Trial for Locally Advanced Pancreas Cancer

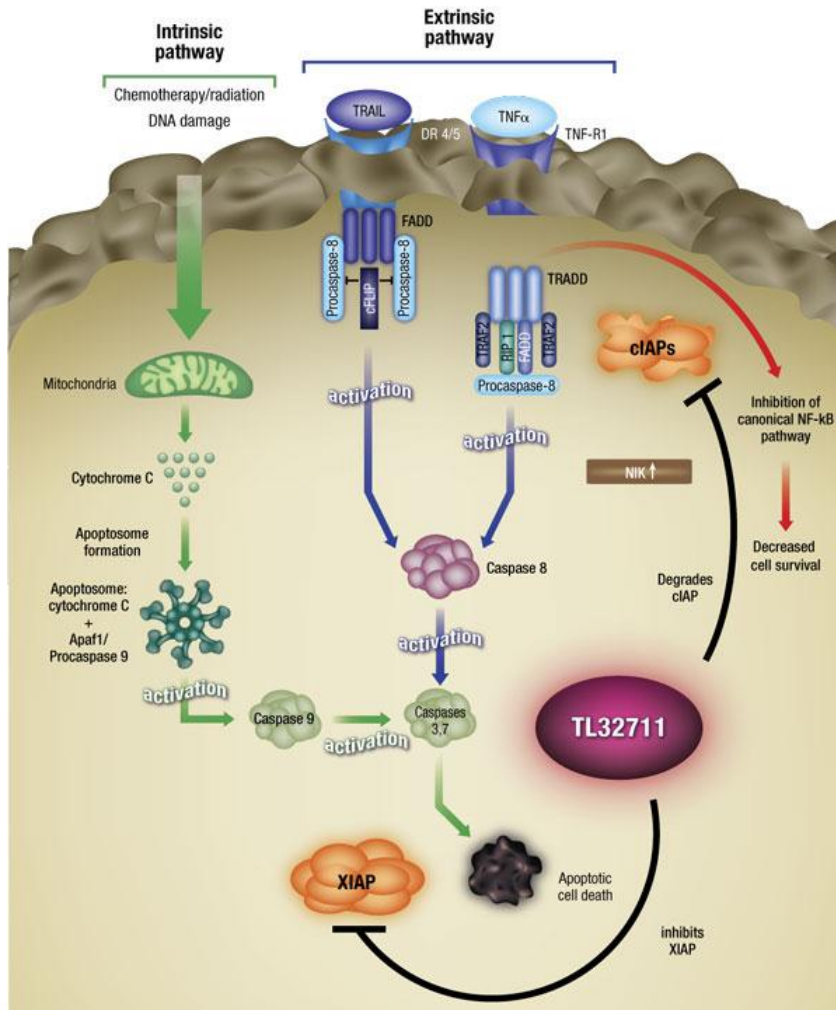
Study Schema



Metastatic Pancreas Cancer



Birinapant



- Programmed cell death is called apoptosis.
- Cancer cells circumvent apoptosis and continue to grow.
- TL32711 or birinapant, antagonizes the cancer cells' inhibitors of apoptosis and can make the chemotherapy work better at killing cancer cells.

Gemcitabine/Cisplatin + TL 327811 (Birinapant) Pancreas Cancer

Table 1b: Dose escalation scheme of TL32711 in combination with gemcitabine plus cisplatin (Part A2) (each cycle is 21 days)

Dose Level	TL32711 (iv)	Gemcitabine (iv) once weekly x 2 weeks (Day 1 and 8)	Cisplatin (iv) once every 3 weeks (Day 1)
-A1	17 mg/m ² once weekly x 2	1000 mg/m ²	75 mg/m ²
A1	22 mg/m ² once weekly x 2		
A2	26 mg/m ² once weekly x 2		
A3	35 mg/m ² once weekly x 2		



“Enrollment in a clinical trial is the best management for patients with cancer”

National Comprehensive Cancer Network Guidelines



TEAMWORK!



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