



Acute Pancreatitis Management in China

Lu Ke, Associate Professor of Surgery and CCM

Wei Qin Li, Professor of Surgery and CCM, Director of DCCM and NCSAP

National Center of Severe Acute Pancreatitis

Jingling Hospital, Nanjing University





No conflict of interest
No disclosures





EPIDEMIOLOGY AND ETIOLOGY

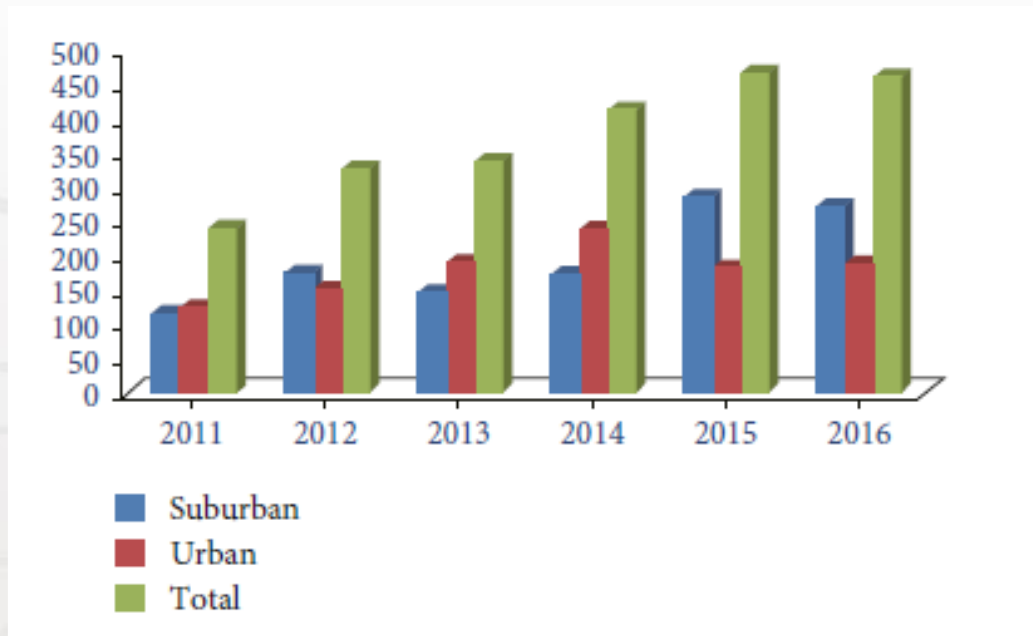


Epidemiology

No nationwide data for the incidence of acute pancreatitis

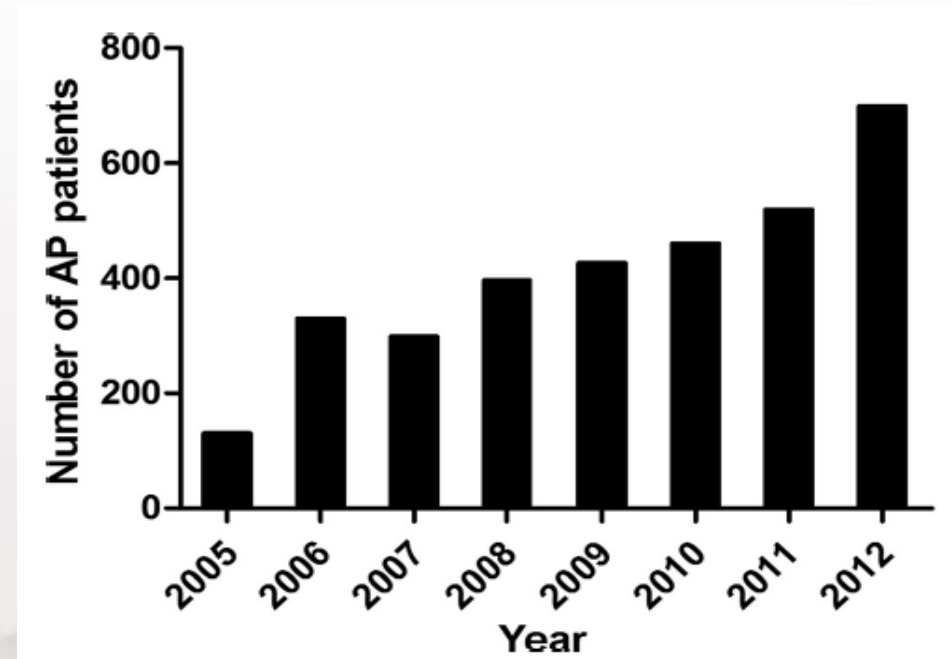
Provincial data for the Jiangsu Province offered by the government showed **48** cases(2016) and **60** case(2017) per 100000.

FYI: Jiangsu is a east province of China with a population of 80 million



□ Data from a regional hospital located in Shanghai

Gastroenterol Res Pract. 2018 Aug 12



□ Data from a regional hospital located in Shanghai

Pancreas. 2017 Apr;46(4):504-509

HTG-acute pancreatitis



- Gallstones、Alcohol misuse and HTG are most common causes of AP in China
- **Differently, HTG has been the second leading cause of AP in China**

Worldwide

✓ HTG-AP accounts for 2-5%

THE NEW ENGLAND JOURNAL of MEDICINE
REVIEW ARTICLE
Edward W. Campion, M.D., Editor
Acute Pancreatitis
Chris E. Forsmark, M.D., Santhi Swaroop Vege, M.D., and C. Mel Wilcox, M.D.

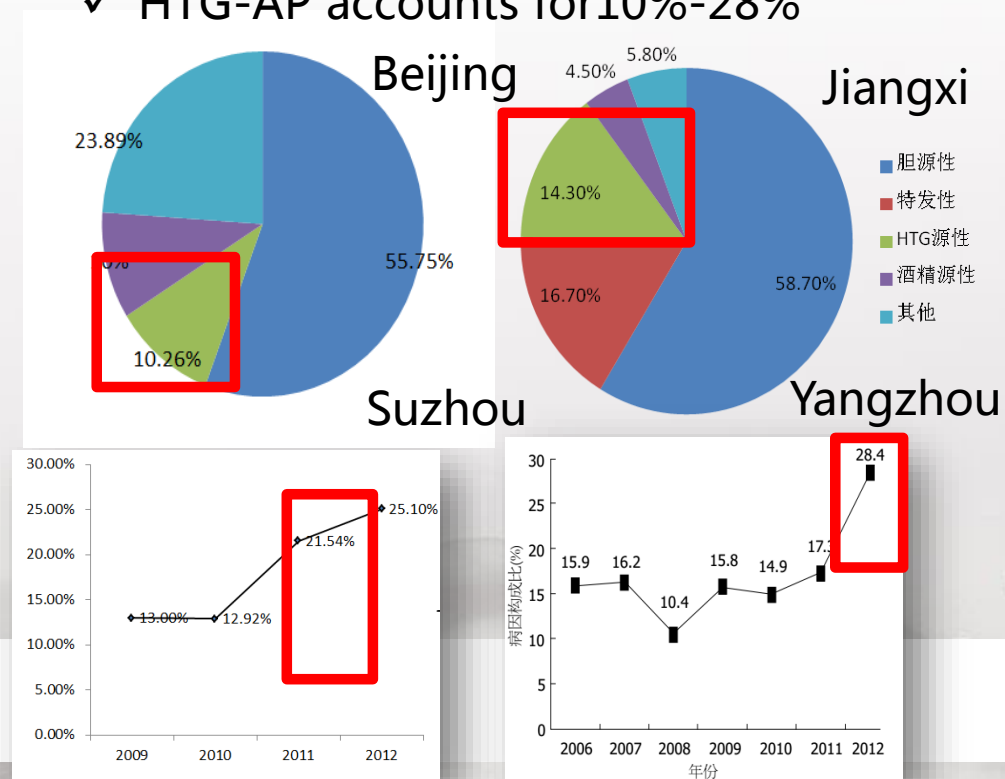
Table 1. Causes of Acute Pancreatitis.*

Cause	Approximate Frequency	Diagnostic Clues
Gallstones	40%	Gallbladder stones or sludge, abnormal liver-enzyme levels
Alcohol	30%	Acute flares superimposed on underlying chronic pancreatitis
Hypertriglyceridemia	2-5%	Fasting triglycerides >1000 mg/dl (11.3 mmol per liter)
Genetic causes	Not known	Recurrent acute pancreatitis and chronic pancreatitis
Drugs	<5%	Other evidence of drug allergy (e.g., rash) only in rare cases
Autoimmune cause	<1%	Type 1: obstructive jaundice, elevated serum IgG4 levels, response to glucocorticoids; type 2: possible presentation as acute pancreatitis; occurrence in younger patients; no IgG4 elevation; response to glucocorticoids

N Engl J Med 2016, 375(20):1972-1981

In China

✓ HTG-AP accounts for 10%-28%



世界华人消化杂志 2013; 21(3): 266-271;

Clinical characteristics of HTG-AP

- HTG-AP patients are younger with more diabetes and fatty liver. More males patients compared with other etiologies.

- HTG-AP are more severely ill evidenced by significant increased rate of AKI and ARDS

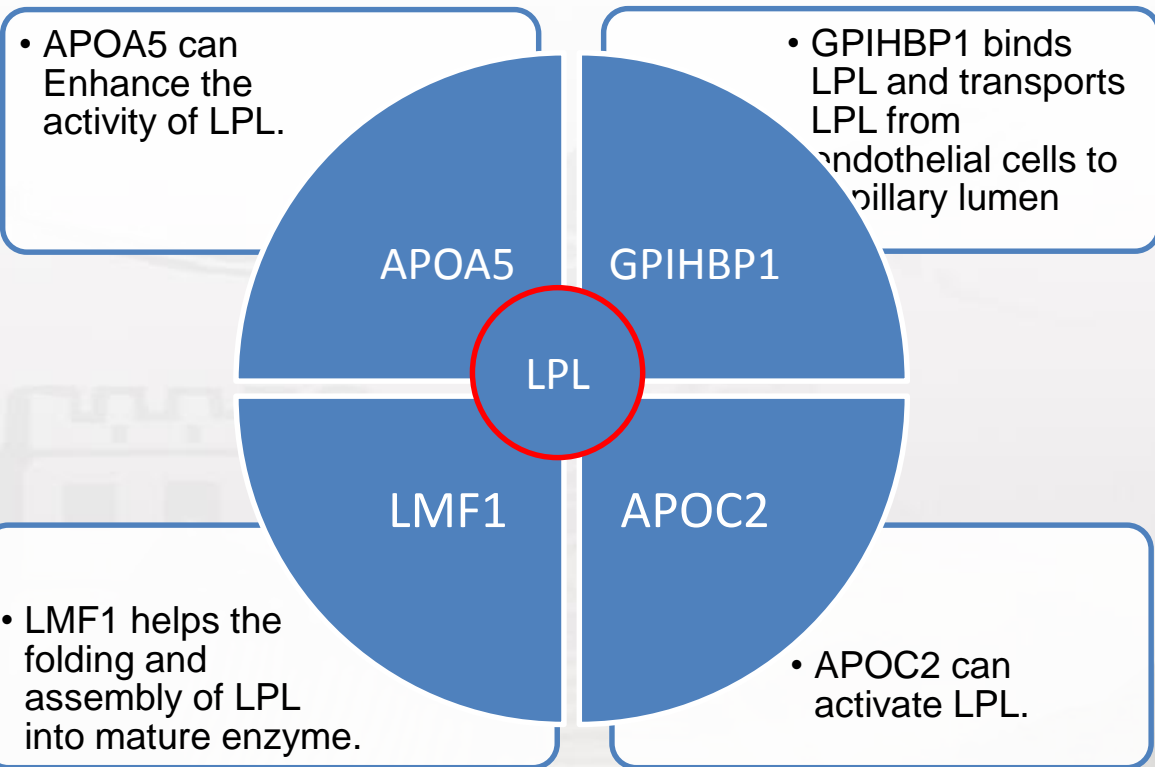
Table 3 Systemic complications between the patients

Variable	Biliary acute Pancreatitis (n = 425)	Hypertriglyceridemia acute Pancreatitis (n = 305)	P value
ARDS	130(30.6%)	116(38.0%)	0.039
AKI	91(21.4%)	105(34.4%)	P < 0.01
Intra-abdominal hypertension	23(5.4%)	28(9.2%)	0.056
Shock	66(15.5%)	49(16.1%)	0.838
Intra-abdominal hemorrhage	56(13.2%)	34(11.1%)	0.427
Sepsis	39(9.2%)	21(6.9%)	0.278
Portal vein thrombosis	47(11.1%)	26(8.5%)	0.317
Deep venous thrombosis	27(6.4%)	37(12.1%)	0.008
Acute hepatic injury	45(10.6%)	21(6.9%)	0.090
Gastrointestinal fistula	75(17.6%)	44(14.4%)	0.265
Digestive tract hemorrhage	11(2.6%)	8(2.6%)	1
Chylous fistula	6(1.4%)	0(0.0%)	0.044
Diarrhea	9(2.1%)	9(3.0%)	0.479
Ileus	7(1.6%)	11(3.6%)	0.144
MODS	96(22.6%)	91(29.8%)	0.032

ARDS acute respiratory distress syndrome, AKI acute kidney injury, MODS multiple organ dysfunction syndrome

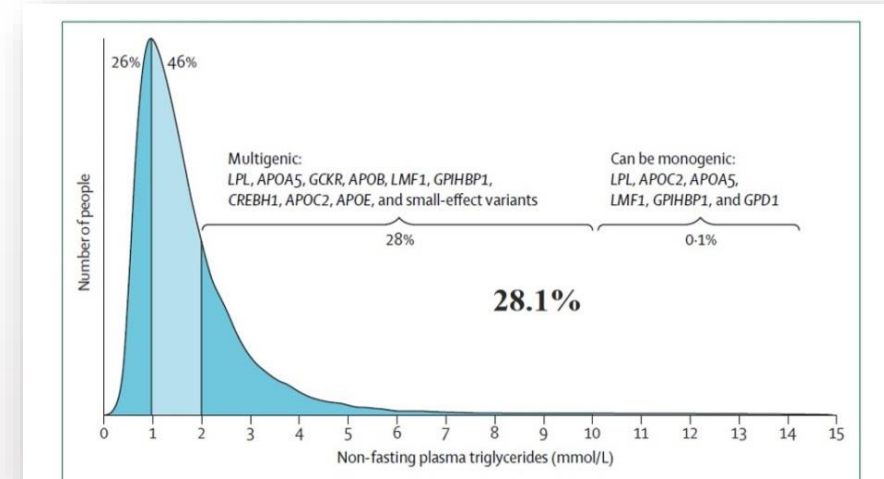
Genetic defect and HTG

- Lipoprotein Lipase (LPL): the key lipase to hydrolyze TG



N Engl J Med. 2016;374(19):1898.

- Gene mutation is associated with HTG.

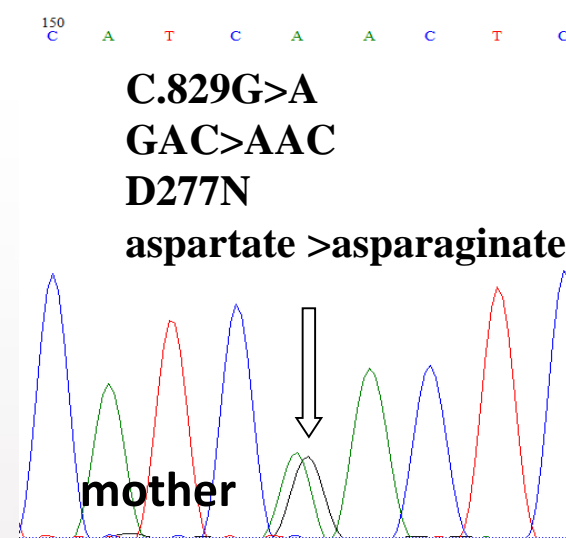
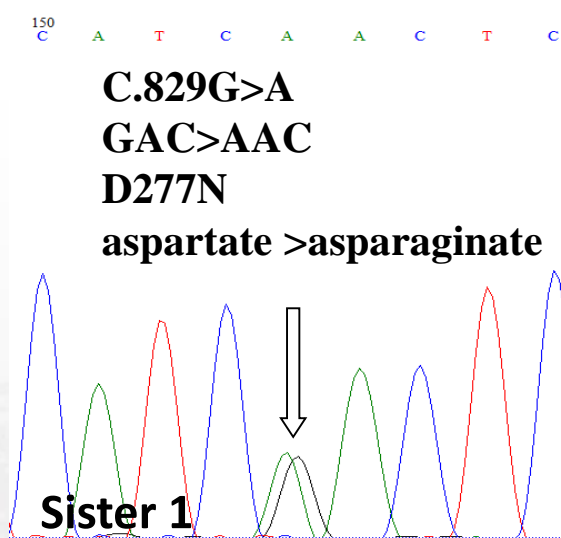
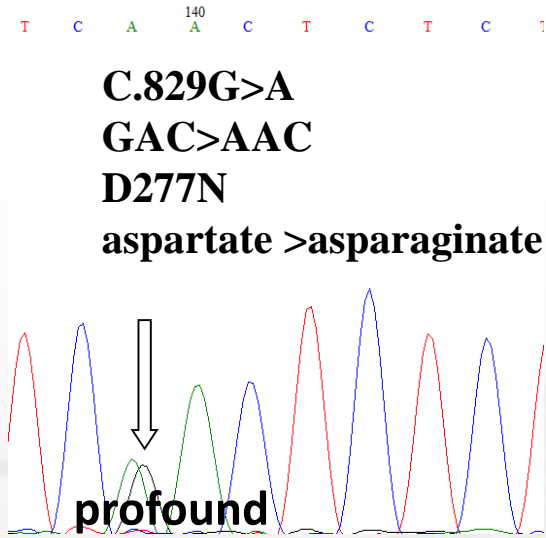


Lancet Diabetes Endocrinol. 2014 Aug;2(8):655-66

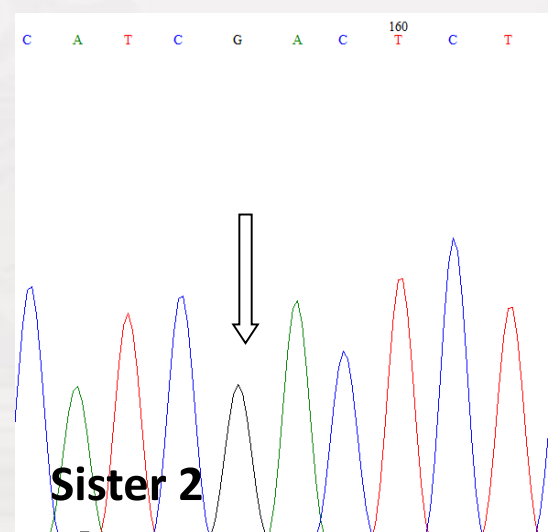
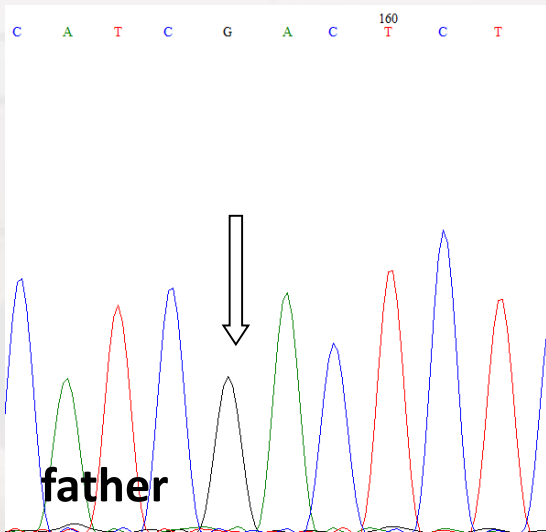
Predicted damaging variant accumulation in acute pancreatitis patients with HTG and controls (Unpublished data)

	All mutations		Missense mutation		Nonsense mutation	
	HTG N=412	Controls N=169	HTG N=412	Controls N=169	HTG N=412	Controls N=169
<i>LPL</i>	42(10.2%)	0 (0)	40 (0)	0 (0)	2 (0)	0 (0)
<i>APOA5</i>	121(29.4%)	40(23.7%)	121(29.4%)	40(23.7%)	0 (0)	0 (0)
<i>GPIHBP1</i>	19 (4.6%)	0 (0)	19 (4.6%)	0 (0)	0 (0)	0 (0)

Sequencing results from a family with multiple HTG-AP cases



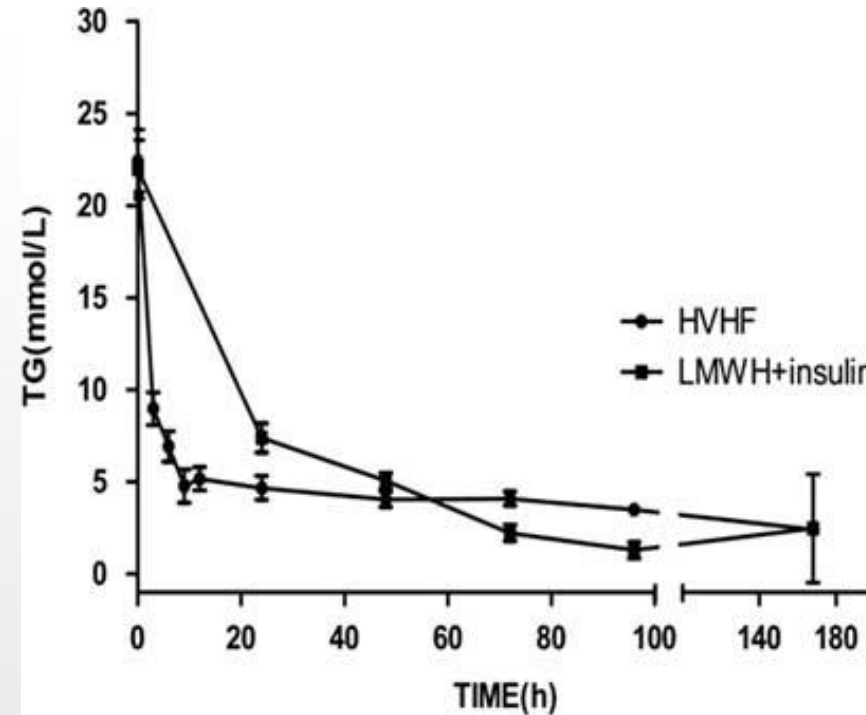
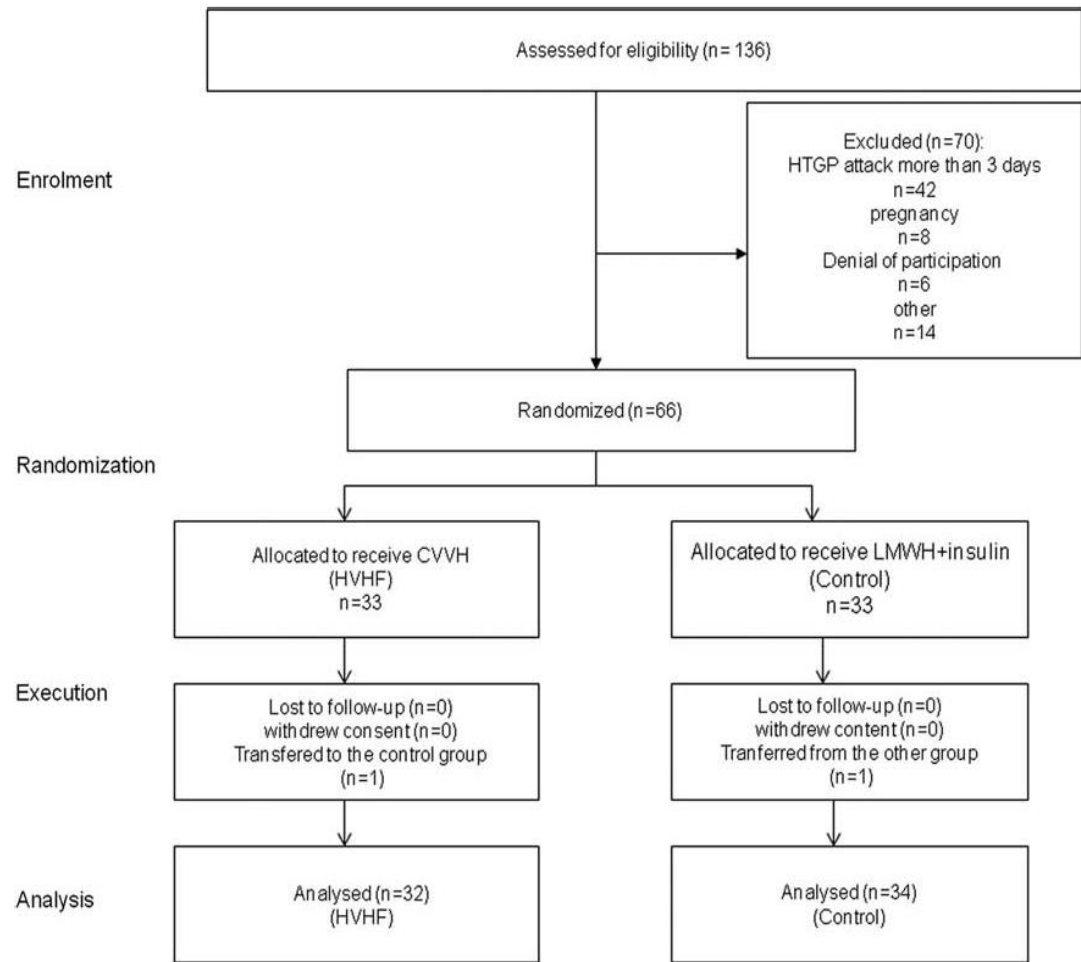
D277N



- The sisters carrying this heterozygous mutation both had multiple attacks of AP
- Their mother had one episode

Treatment

A pilot study from Nanchang using **LMWH combined with Insulin** compared to early HVHF



HVHF is not superior in terms of clinical outcomes and costs than LMWH+insulin.



MANAGEMENT



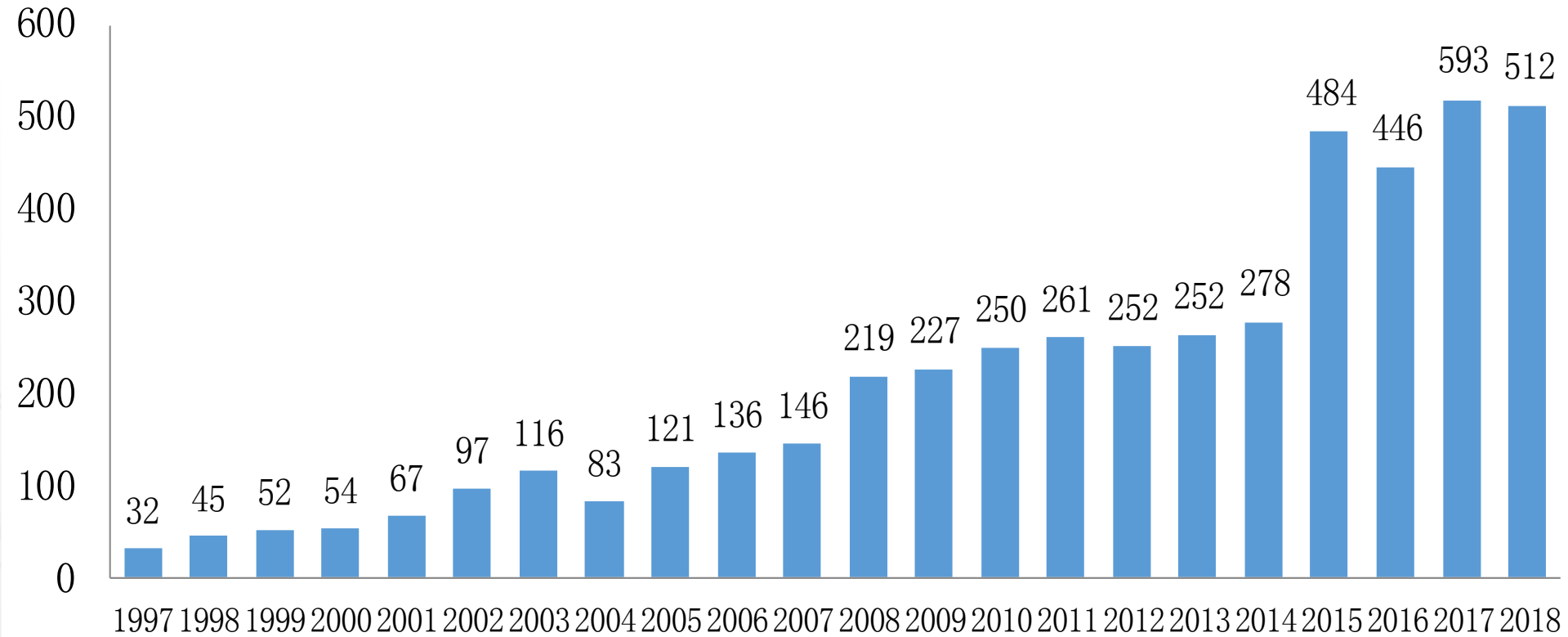
Largest referral center for SAP in China



- Approximately **80%** of the patients are referrals from 32 regions of China and also foreign visitors
- Received more than 50 patients with air medical transportations service offered by SOS

□ More than **60%** of the patients are **foreigners** (with 10% from the United States)

Number of patients in the last 20 years



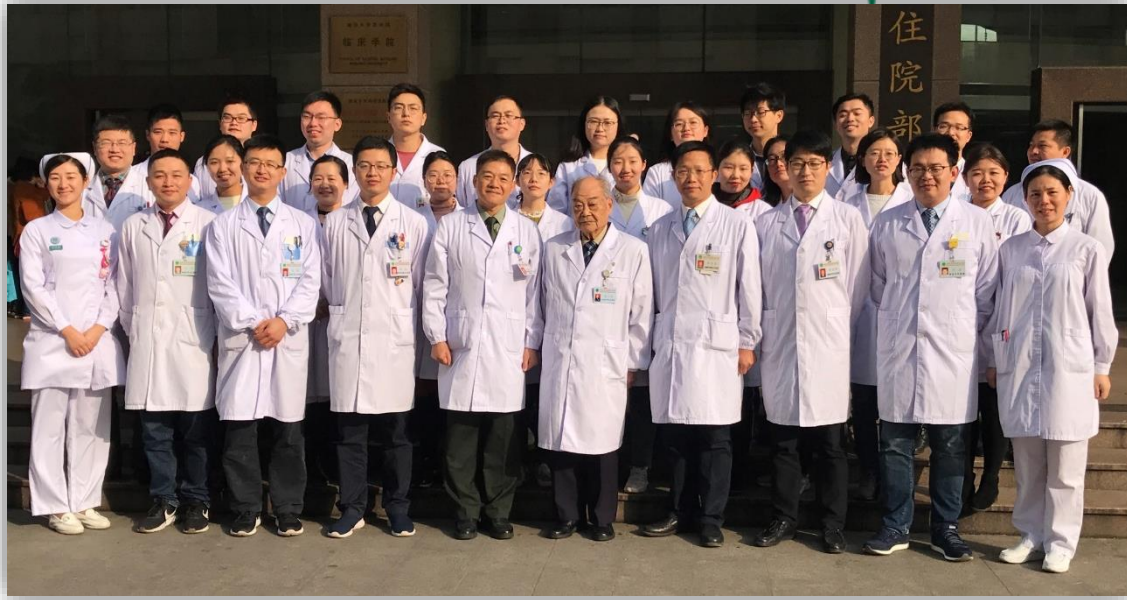
**1997.1.1—2018.12.31, 4723 cases of acute pancreatitis patients
were admitted to our center**

Set-up of our center



Structure of MDT team

Our Center



Center of Severe Acute Pancreatitis
Jinling Hospital ,Nanjing

Team leader: Prof. Weiqin Li

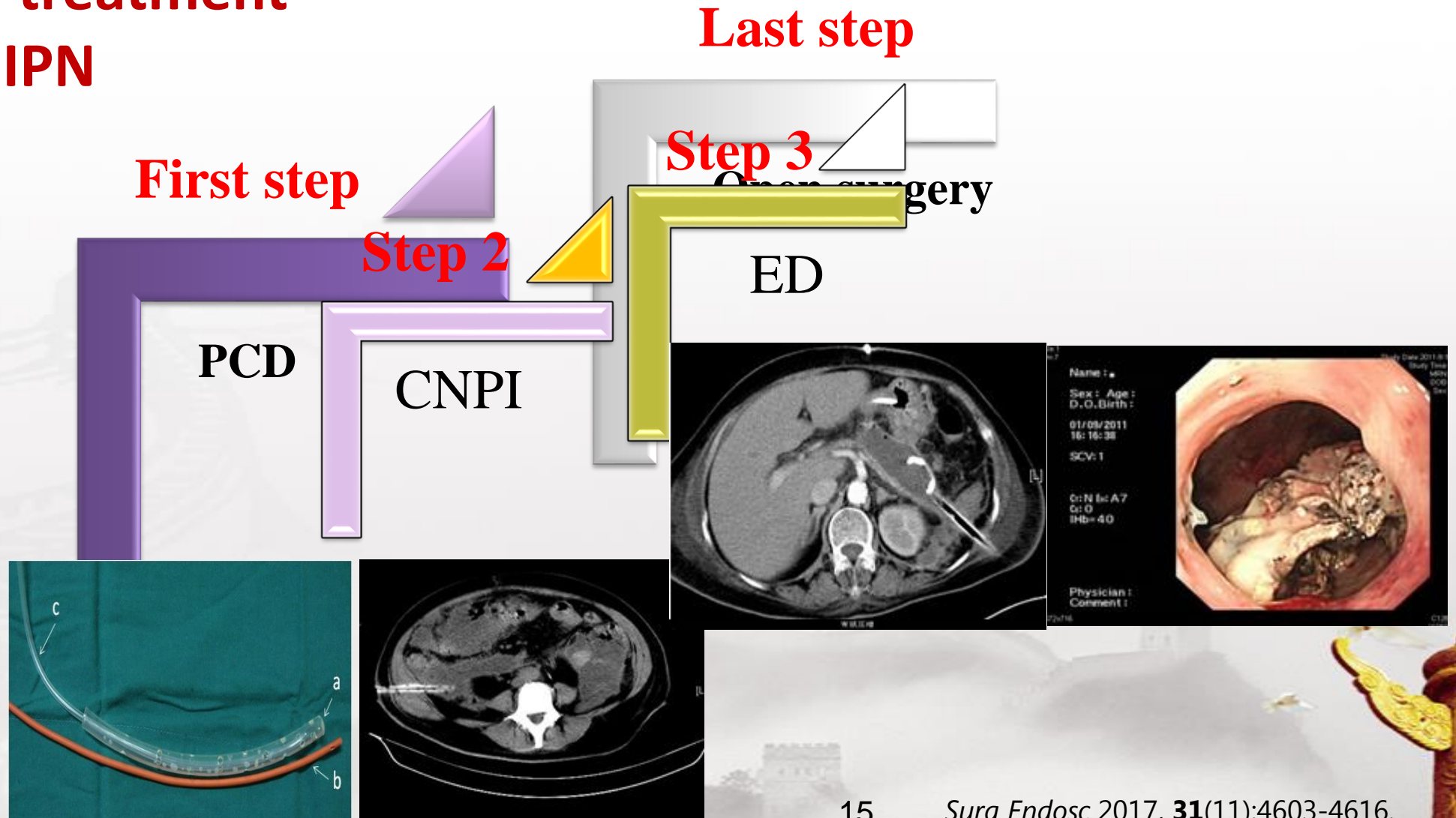
A very unique **build-in multiple-discipline** unit



- Dedicating to acute pancreatitis for 20 years and serve as a national rescue center
- Aiming to build both **national and international collaboration** network in recent years
- Prospectively collected database for 6 years
- Annual conference on acute pancreatitis held in Nanjing

The novel four-step drainage strategy

Evolution of treatment strategy for IPN



Management of IPN

The shift from open surgery to minimally invasive approach

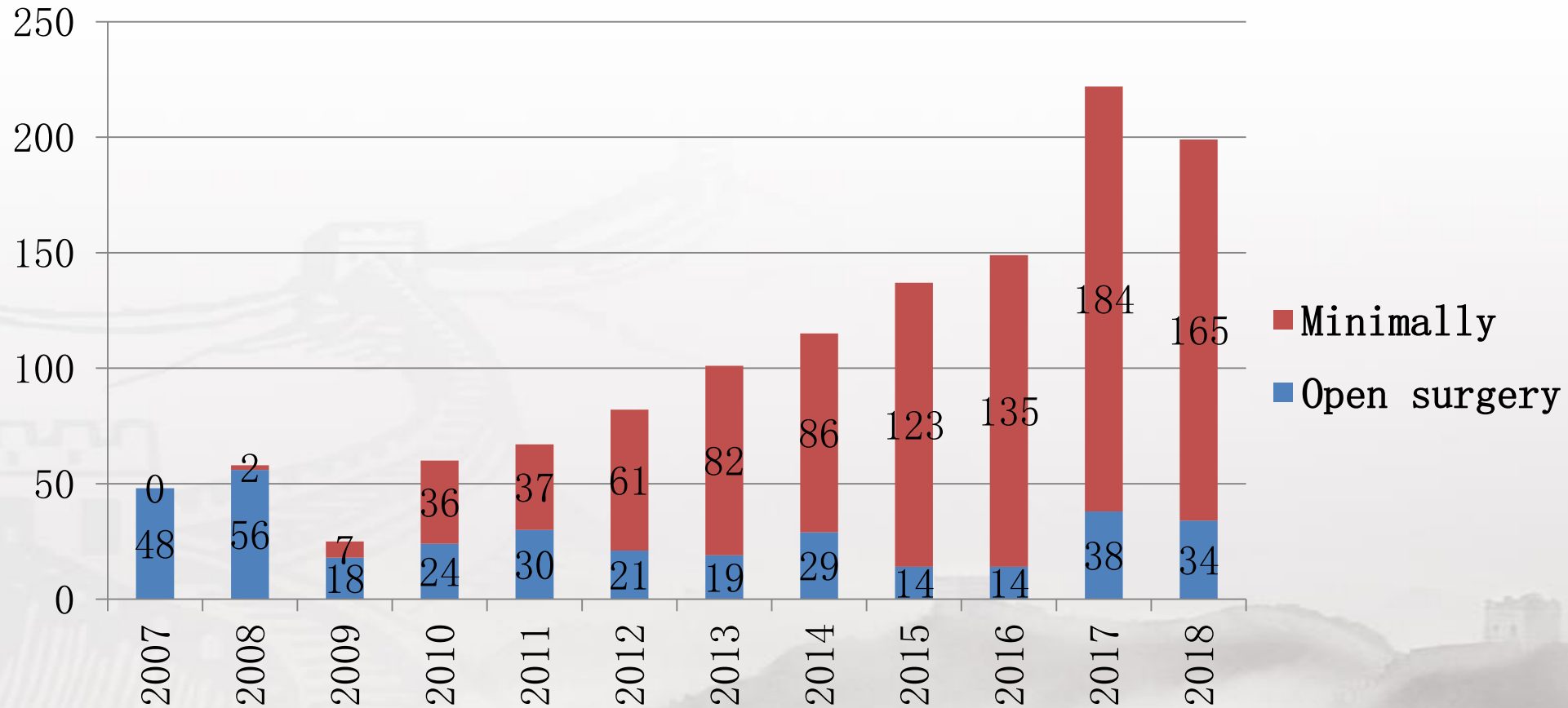
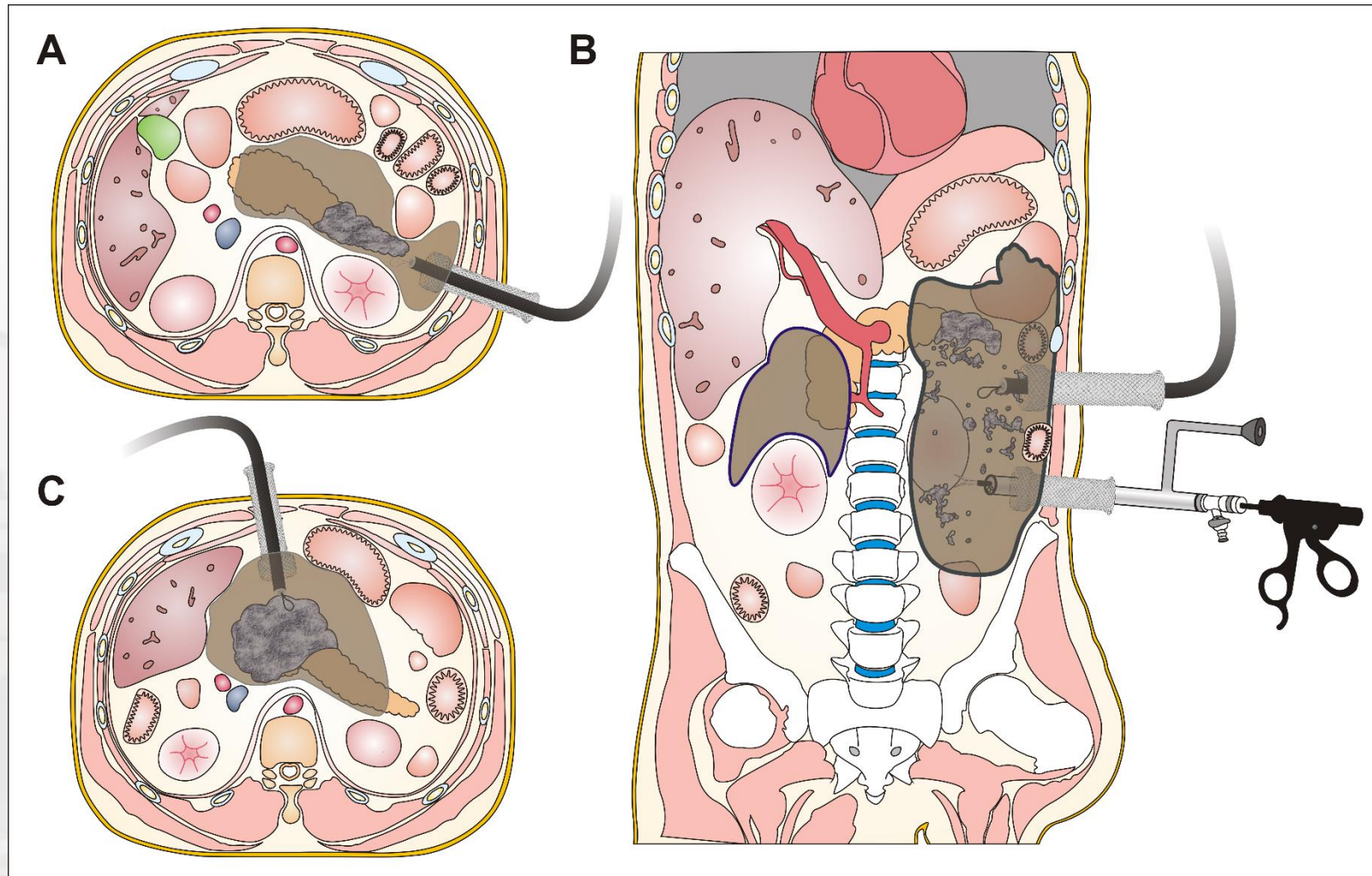


Figure: IPN patients treated in our center

The routes for SAPEN

Stent-assisted percutaneous endoscopic necrosectomy



More choices with the SAPEN procedure

A before-and-after study is almost finished.

Co-published with Prof. John Windsor

A before-and-after comparison(unpublished data)

	Stent (n=37)	Original (n=73)	Relative Risk (95%CI)	p
Primary endpoint				
Major complications or death	13(35.13%)	38 (52.05%)	0.50(0.22-1.13)	0.095
Secondary endpoints				
Organ failure New-onset				
Pulmonary	5(13.51%)	8(10.96%)	1.27(0.38-4.19)	0.695
Cardiovascular	8(21.62%)	17(23.28%)	0.91(0.35-2.36)	0.844
Renal	3(8.1%)	5(6.85%)	1.20(0.27-5.32)	0.810
MODS	5(13.51%)	8(10.96%)	1.27(0.38-4.19)	0.695
New onset-sepsis	13(35.14%)	41 (56.16%)	0.42(0.19-0.96)	0.037
Bleeding required intervention	6(16.21%)	23(31.5%)	0.42(0.15-1.15)	0.091
New-onset gastrointestinal fistulas				
Fistulas of colon	4(10.81%)	8(10.96%)	0.99(0.28-3.51)	0.981
Fistulas of stomach duodenum	4(10.81%)	8(10.96%)	0.99(0.28-3.51)	0.981
Pancreatic fistula	7(18.91%)	10(13.70%)	1.47(0.51-4.24)	0.476
Symptomatic SVT	5(13.51%)	20(27.39%)	0.41(0.14-1.21)	0.108
Death	5(13.51%)	10(13.70%)	0.98(0.31-3.12)	0.979

Efforts on Endoscopic transluminal debridement

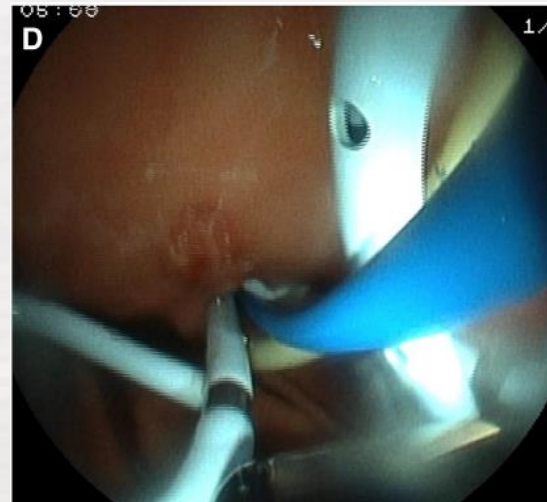
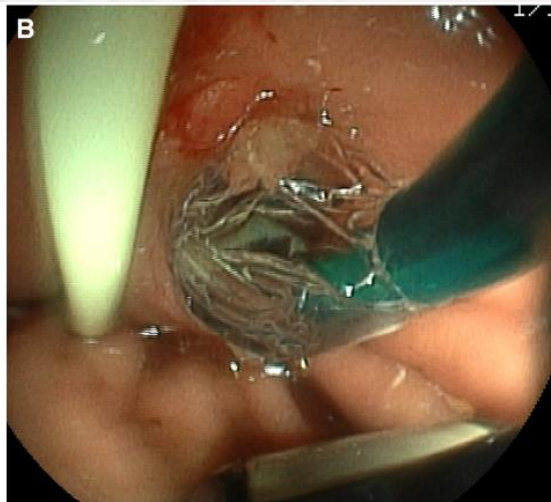
STUDY PROTOCOL

Open Access

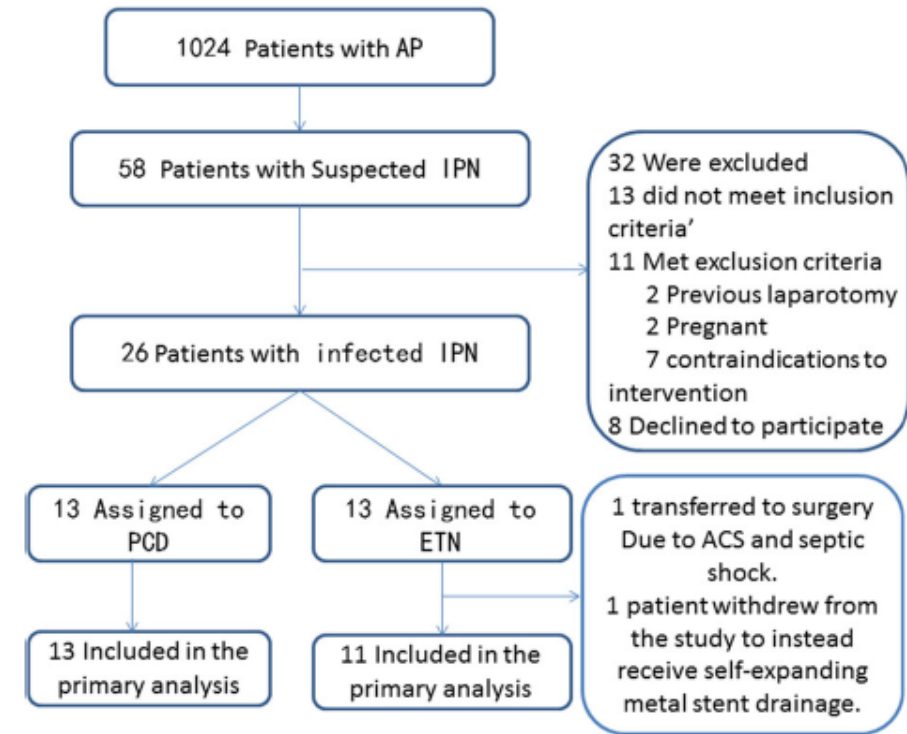


Lumen-apposing metal stents (LAMS) versus plastic stents for EUS-guided drainage of walled-off necrosis (WON) (LVPWON): study protocol for a multicenter randomized controlled trial

- Trials conducted in 18 hospitals all over China lead by the Changhai hospital in Shanghai



- Preliminary data from Jiangxi



- Endoscopic transluminal drainage seems less invasive in terms of clinical outcomes





**NATIONAL COLLABORATIVE
PLATFORMS
WE ARE BUILDING**



National Collaborative Network for Clinical Work and Research



Tier-1 Core
Partners

Nanjing, Chengdu, Shanghai, Nanchang

Tier-2 Regional
Centers

38 Central hospitals for each region

Tier-3 Extensive
Cooperators

Medical Union with 118 Members



Collaborative platform

Internet based National Collaborative Network--- **APNET**

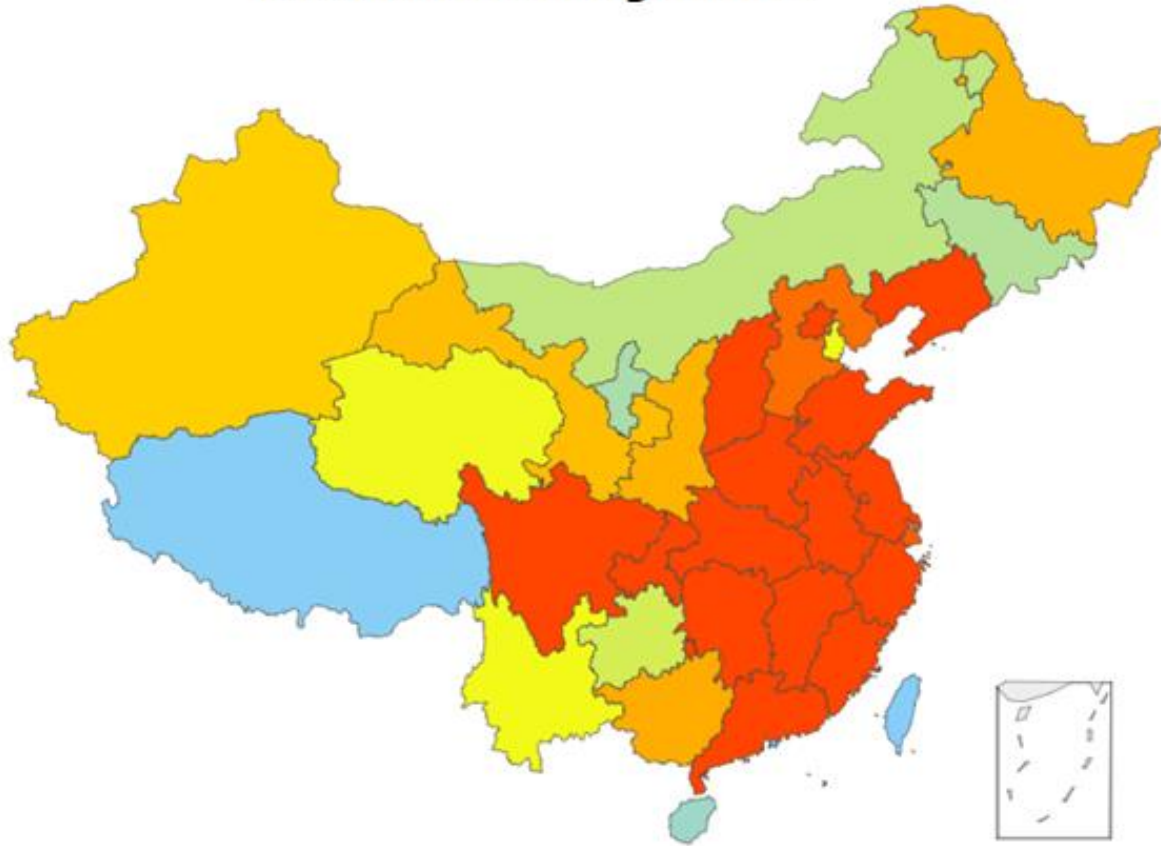


- Tele-consulting
- Two-way patients transferring
- Online training
- Latest information
- Quality control

APNET

Coverage

Distribution of registrants



Covered provinces: **31** regions
Registrants: **7891** persons
Sites: **2373** hospitals and institutes



APNET



Remote expert consulting



Remote consulting

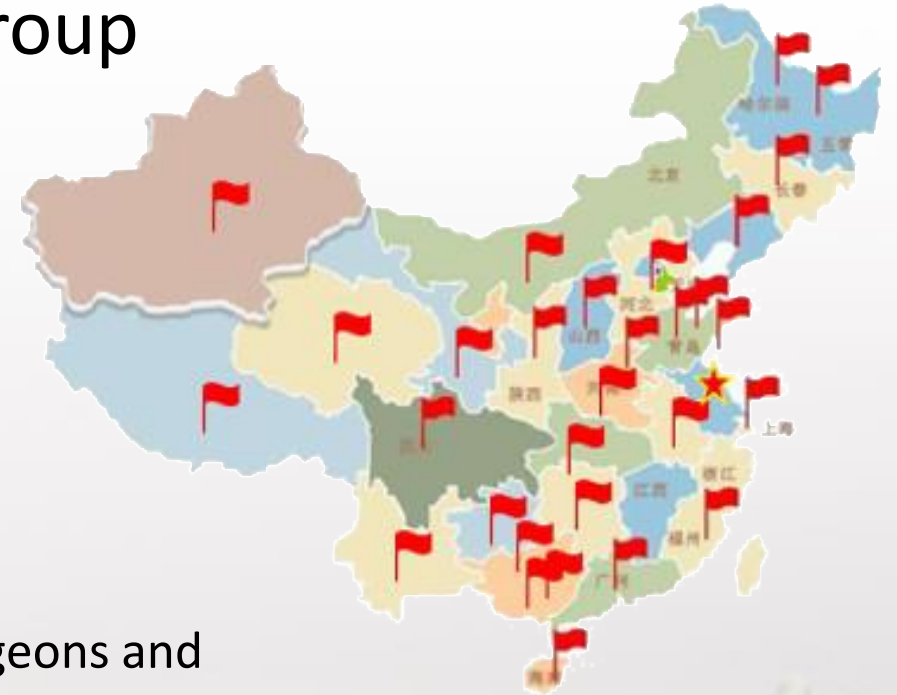


Multi-expert consulting



Research network for multi-center clinical trials

中国急性胰腺炎临床研究小组 Chinese Acute pancreatitis clinical trials Group



CAPCTG was formed in 2015 with a small group of Intensivists, surgeons and gastroenterologists keen to establish a network for designing and conducting multi-centre, investigator-initiated research on ACUTE PANCREATITIS in China.

Now we have members from 33 institutes running 3 active multi-center trials. More studies are on the way.



Thymosin alpha 1 in the pRevention of pAncreatic infeCtion following nEcrotising acute pancreatitis

Severe Acute Pancreatitis

Immunodisorders

Severe infection

Acute phase

Late phase

The **TRACE** trial, NCT02473406

- ❑ The estimated sample size is 520 for this study
- ❑ We have now randomized 306 patients and the study is planned to be completed within 2020.



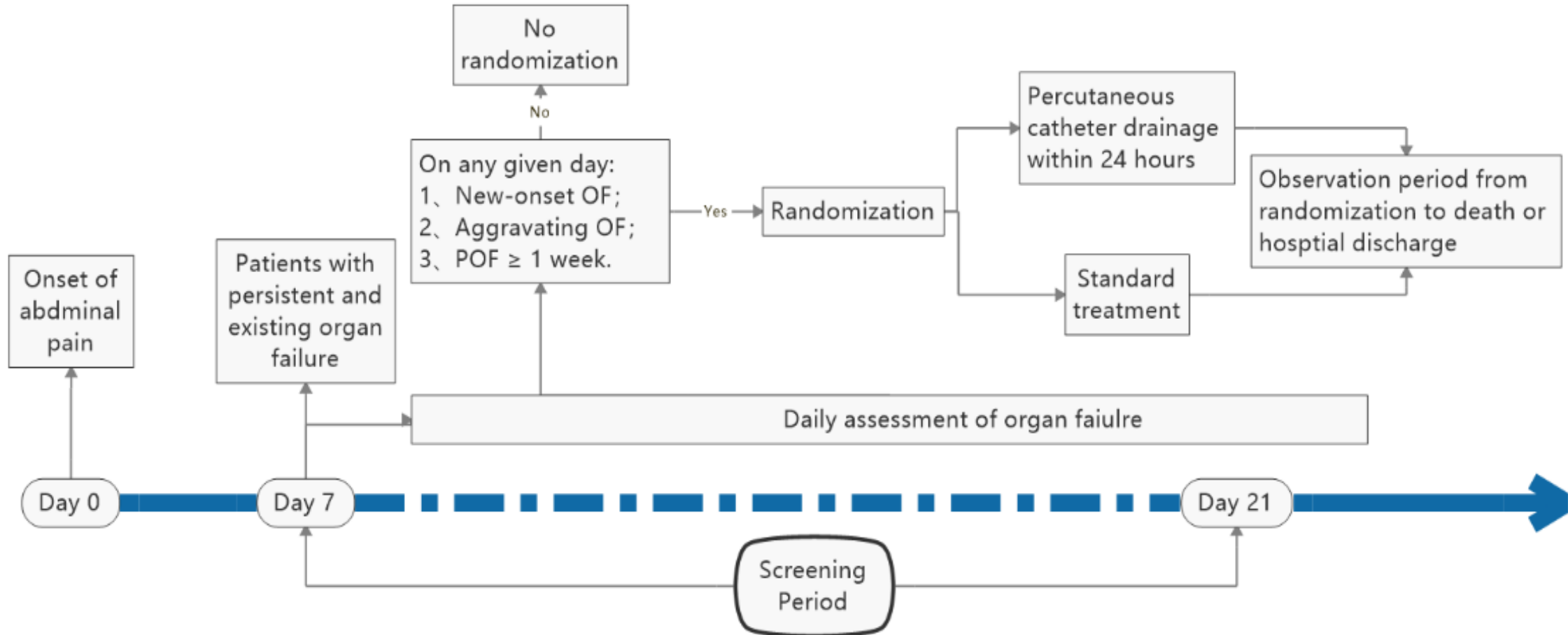


Early on-demand intervention of acute necrotic collection versus standard treatment among acute necrotizing pancreatitis patients with persistent organ failure: a randomized multi-center trial

The **TIMING** trial ChiCTR1800014963

Scientific question:

Should SAP patients with ANC and persistent organ failure be promptly and proactively intervened?





Thanks!

Collaboration generates Success!

Email : kkb9832@gmail.com

