



## 第 365 期 基層透析週報

發行日期：109/05/21

### 目錄

標題	頁碼
一、台灣基層透析協會 109 年度區域研討會(0616 台中場)	1
二、擬鈣劑治療新知講座-毛鴻忠院長簡報資料	2
三、109 年度會費繳交	30
四、109 年度已繳納「院所負責醫師一萬元會費」名單	30

### 最新消息

#### 一、台灣基層透析協會 109 年度區域研討會(0616 台中場)

時間：2020 年 06 月 16 日（星期二），18：00 - 21：00

地點：台中林酒店 6F 仙侶廳（台中市西屯區朝富路 99 號）

講師：亞洲大學附設醫院內科部 周哲毅主任

議程：

Time	Topic	Speaker
18:00-18:20	Registration	All
18:20-18:30	Opening/用餐	楊孟儒 理事長
18:30-19:30	The next evolution in hemodialysis – HDx Therapy	周哲毅 主任
19:30-20:00	總額協商與醫療政策對基層透析的影響	林元灝 秘書長
20:00-20:30	協會會務報告與未來努力方向	楊孟儒 理事長
20:30-20:50	Discussion	全體與會人員
20:50-21:00	Closing	楊孟儒 理事長

本研討會提供用餐，請務必事先報名，謝謝！

報名方式：

- 協會信箱：[dialysis98@gmail.com](mailto:dialysis98@gmail.com)
- 協會 Line ID：[dialysis98](#)
- 協會電話：0933-255-108

## **二、擬鈣劑治療新知講座-毛鴻忠院長簡報資料**

協會於 109 年 5 月 12 日 ( 週二 ) 晚上 18 : 30 舉辦線上研討會，感謝鴻仁健康診所毛鴻忠院長提供簡報資料予基層會員。

### **SHPT treatment with Parsabiv and real world case sharing**

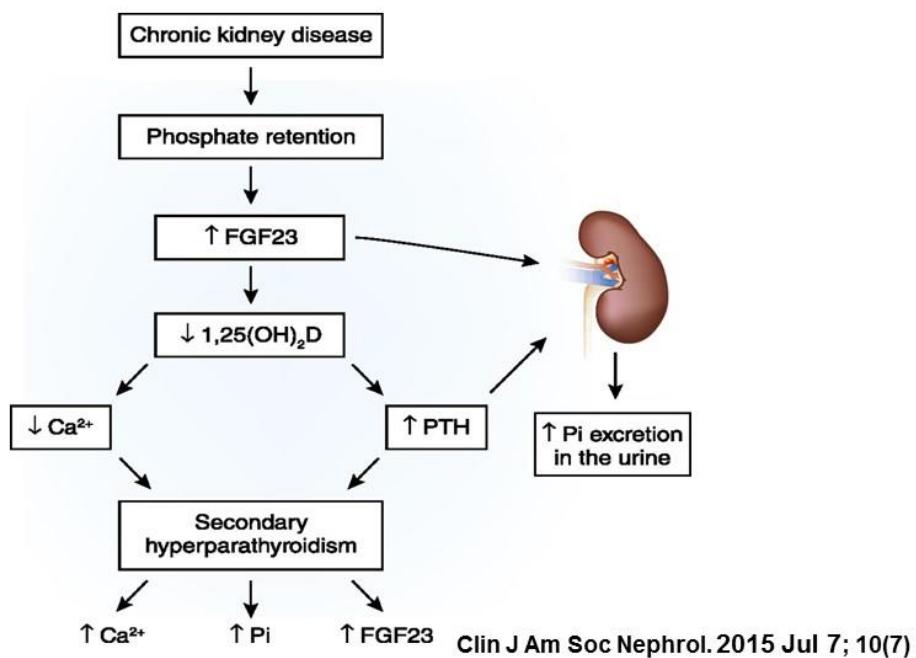


鴻仁健康診所 毛鴻忠

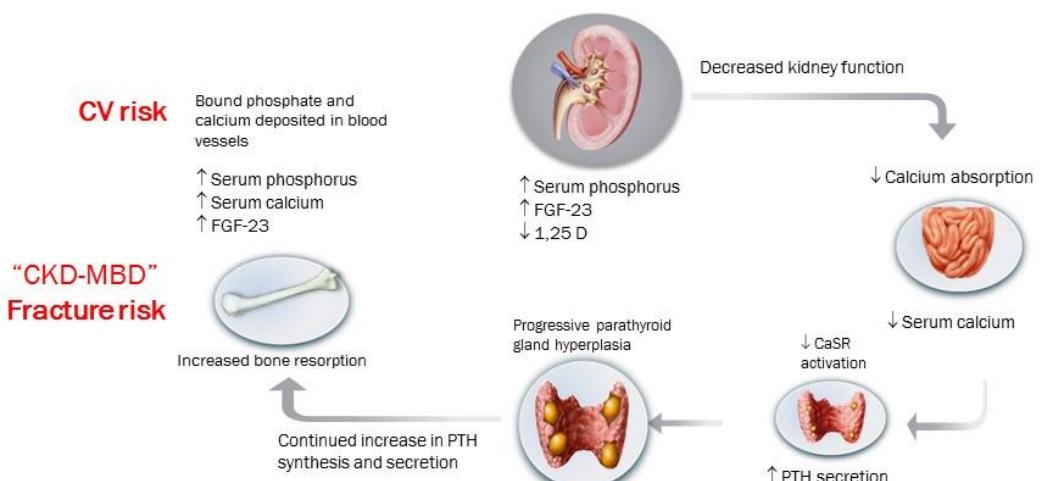
#### **Outline**

- **Pathogenesis of secondary hyperparathyroidism in CKD**
- **Roles of Calcimimetics in SHPT**
- **Etelcalcetide (Parsabiv) study results**
- **Case sharing**

## Pathogenesis of secondary hyperparathyroidism in CKD



## Pathogenesis of secondary hyperparathyroidism in CKD



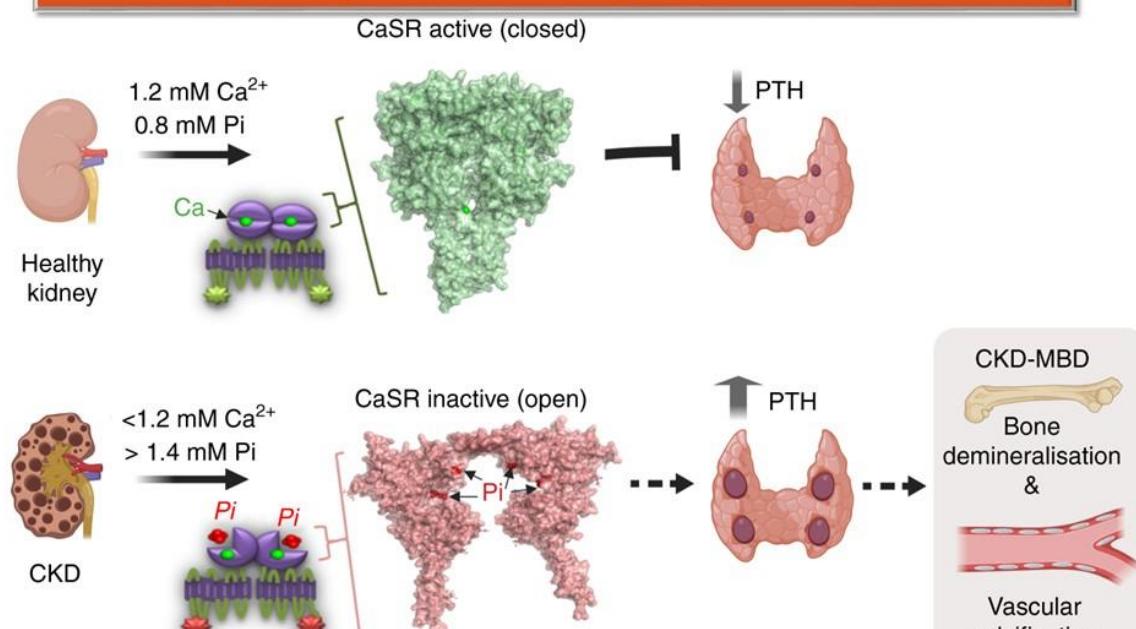
## Treatment of abnormal PTH levels in CKD-MBD

### 2017 KDIGO guideline

- 4.2.1: In patients with **CKD G3a-G5** not on dialysis, the **optimal PTH level** is not known. However, we suggest that patients with levels of intact PTH progressively rising or persistently above the **upper normal limit** for the assay be evaluated for **modifiable factors**, including hyperphosphatemia, hypocalcemia, high phosphate intake, and **vitamin D deficiency** (2C).
- 4.2.4: In patients with **CKD G5D** requiring **PTH-lowering** therapy, we suggest **calcimimetics**, **calcitriol**, or **vitamin D analogs**, or a **combination** of calcimimetics with calcitriol or vitamin D analogs (2B).

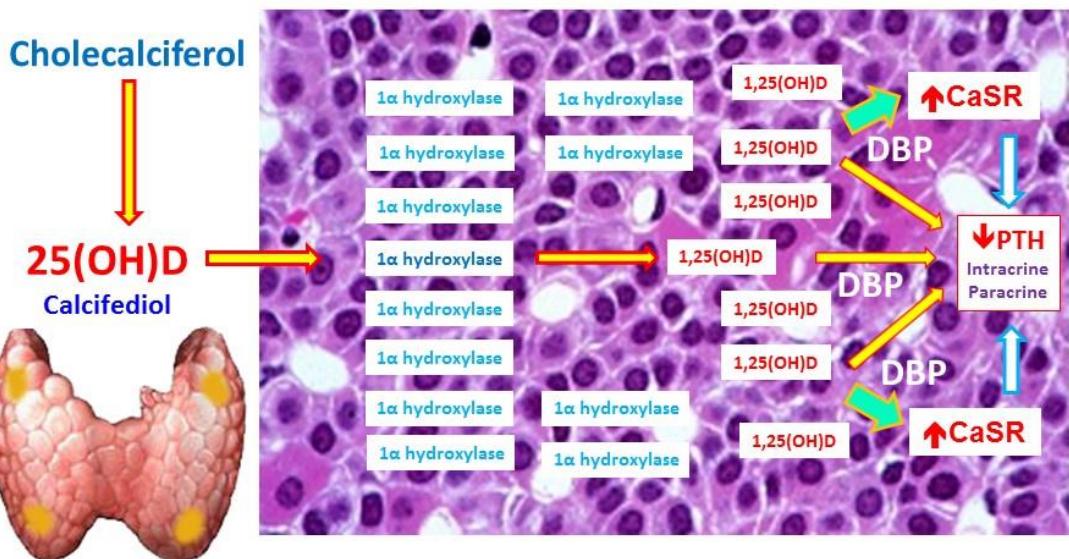
Kidney Int Supp 2017; 7: 1-59

## Control of parathyroid hormone Synthesis and Secretion



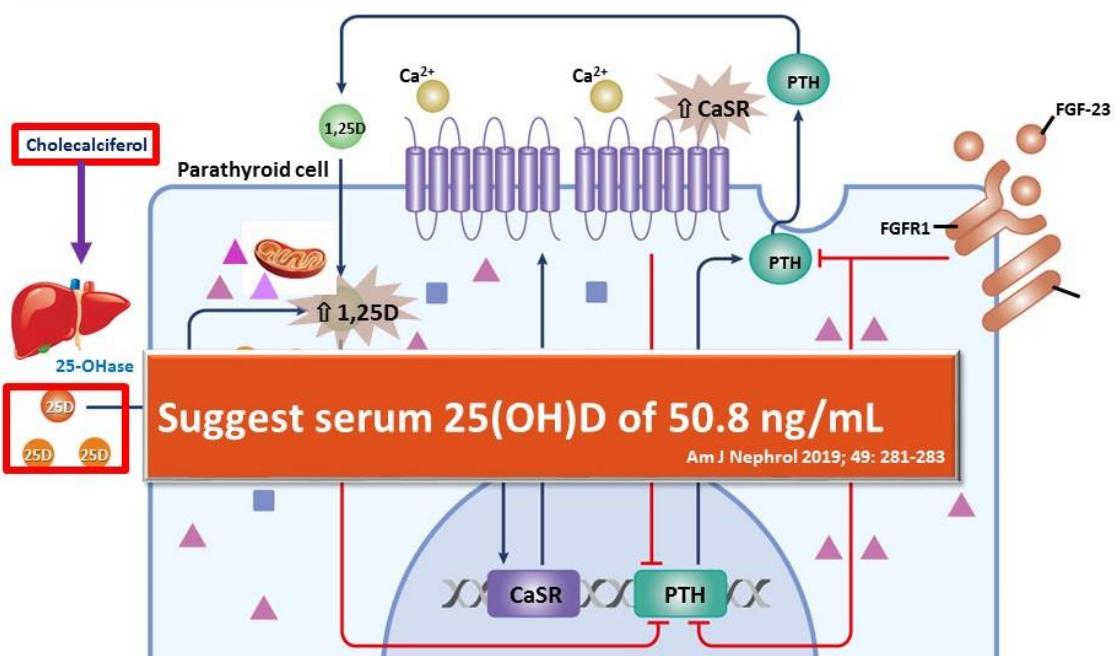
## Vit-D hunger in PTG of SHPT

$1\alpha$  hydroxylase 的表現上升10倍



Edited by Dr. Lu, 2015 Dec

## Nutritional vit-D for SHPT

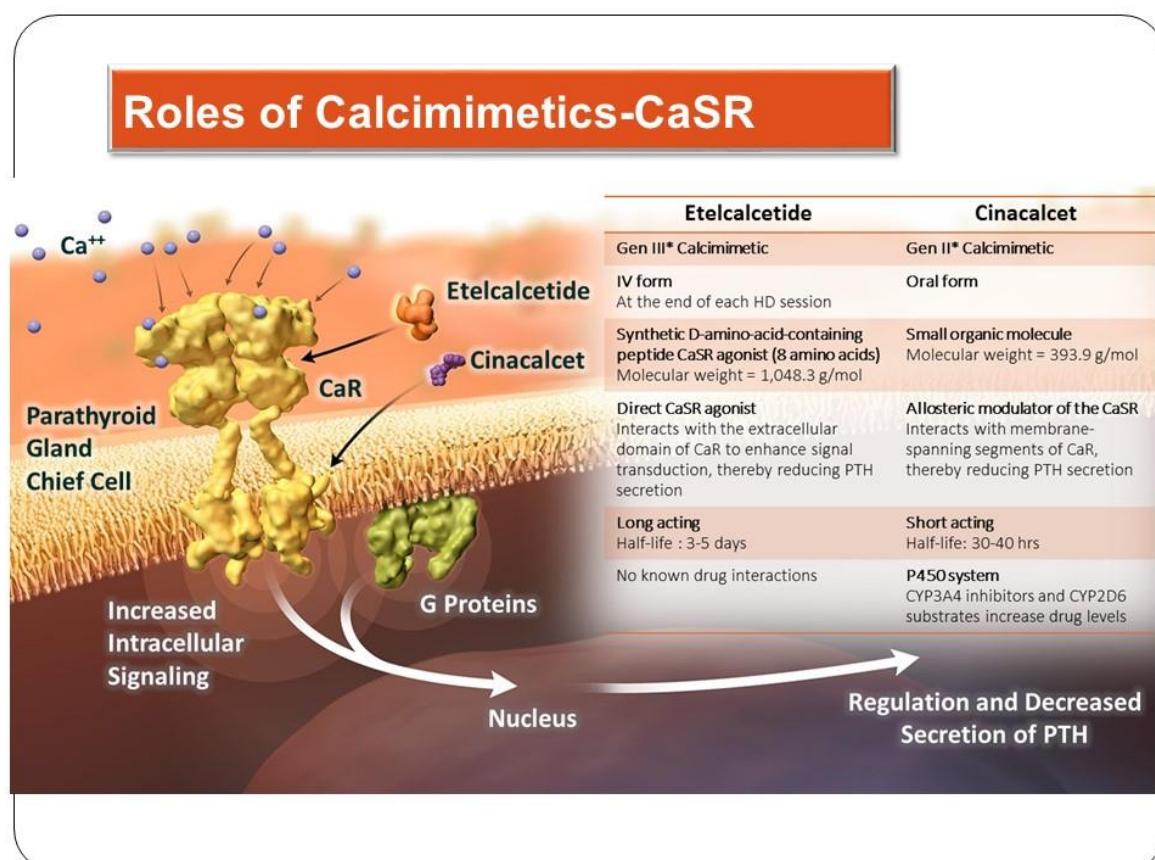
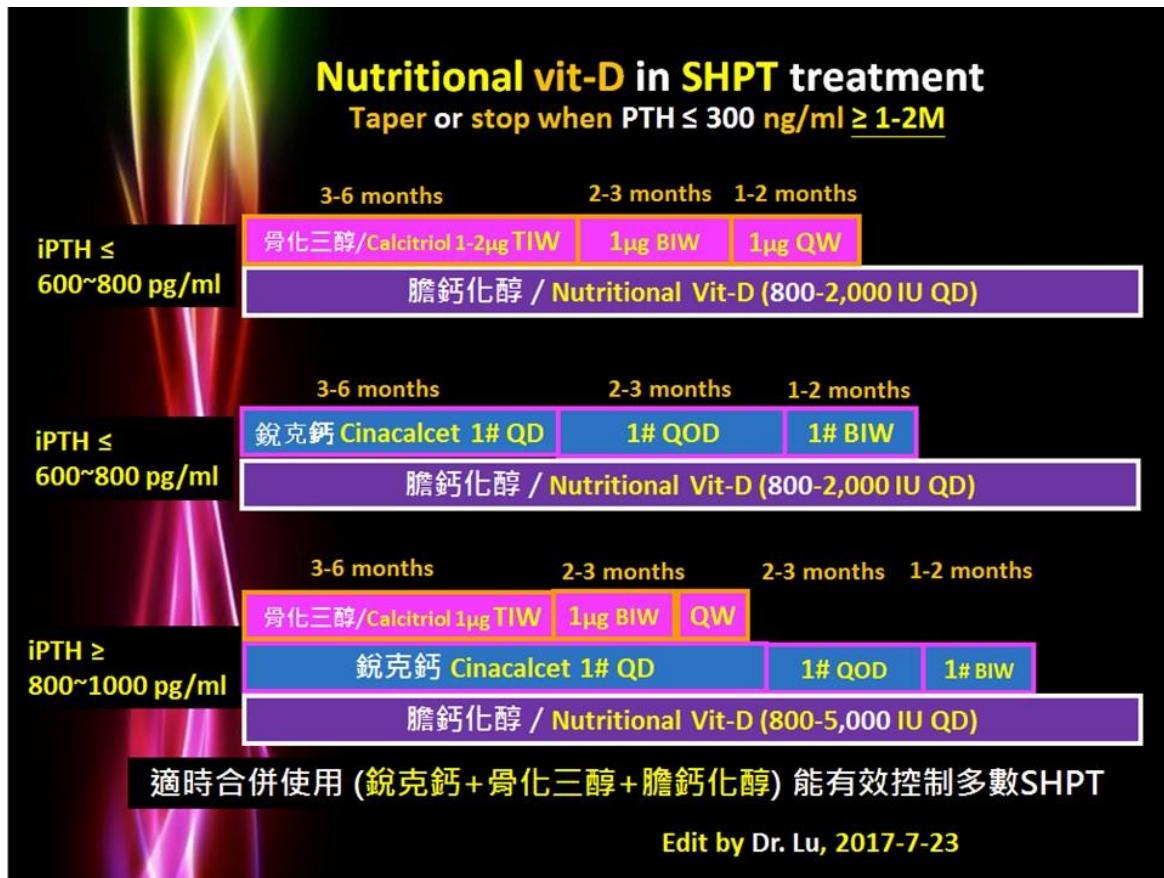


Suggest serum 25(OH)D of 50.8 ng/mL

Am J Nephrol 2019; 49: 281-283

▲ ↑ 1 $\alpha$ -hydroxylase ■ 24-hydroxylase

Lu et al. Nutrients 2018 Dec 3; 10(12): 1890



## Roles of Calcimimetics-CaSR

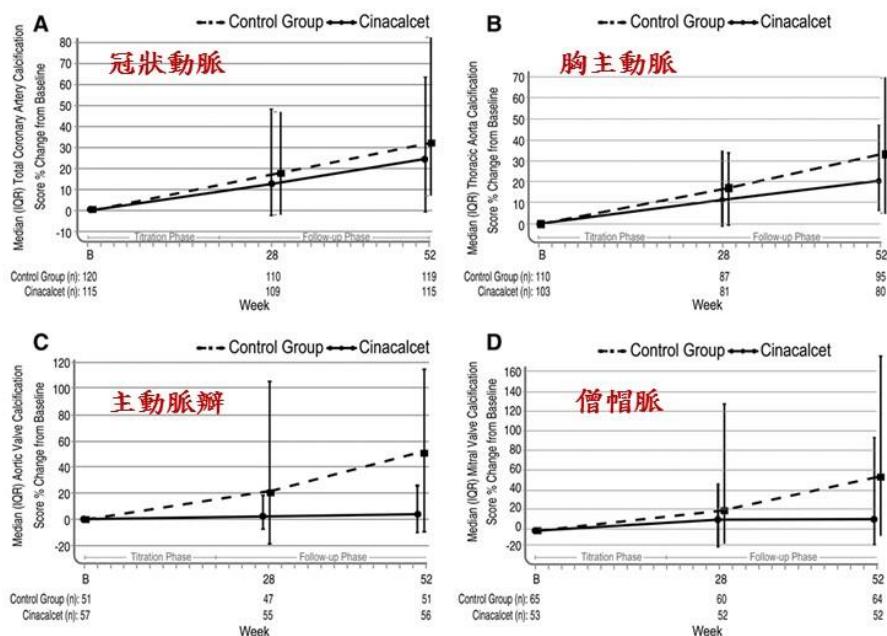
Tissue	Region or cell type	Confirmed or *putative function
Parathyroid glands	Chief cells	Regulation of PTH gene-expression, PTH secretion, and parathyroid gland hyperplasia
Kidney	Proximal tubule	*Regulation of transporter function (eg, Na <sup>+</sup> -K <sup>+</sup> -ATPase)
	Thick ascending limb	Control of urinary Ca <sup>2+</sup> excretion
	Distal nephron	Urinary concentration Ca <sup>2+</sup> reabsorption
Thyroid	C cells	Activation leads to calcitonin release
Skeleton	Osteoclasts	*Osteoclastogenesis *Bone resorption
	Osteoblast	Proliferation, via activation of Jun-terminal kinase pathway and upregulation of mitogenic gene expression
	Chondrocytes	*Regulation of gene expression (eg, proteoglycans)
Gastrointestinal tract	Gastric surface epithelial cells	*Proliferation
	Gastrin-secreting cells	*Gastrin release
	Proximal small intestine	*Epithelial proliferation and differentiation *Motility
	Colonic epithelium	*Influences secretory/absorptive function *Epithelial cell differentiation *Absorption/secretion of Ca <sup>2+</sup> *Fluid transport (?therapeutic target in secretory diarrhoea)

CaR is also expressed in placenta, nervous tissue, bone marrow, anterior pituitary, skin, eye, breast, and pancreas. In many cases, function remains speculative or is implied from observed effects of change in ambient Ca<sup>2+</sup> concentration within particular cell or tissue environment. Data from both in-vitro and in-vivo models.

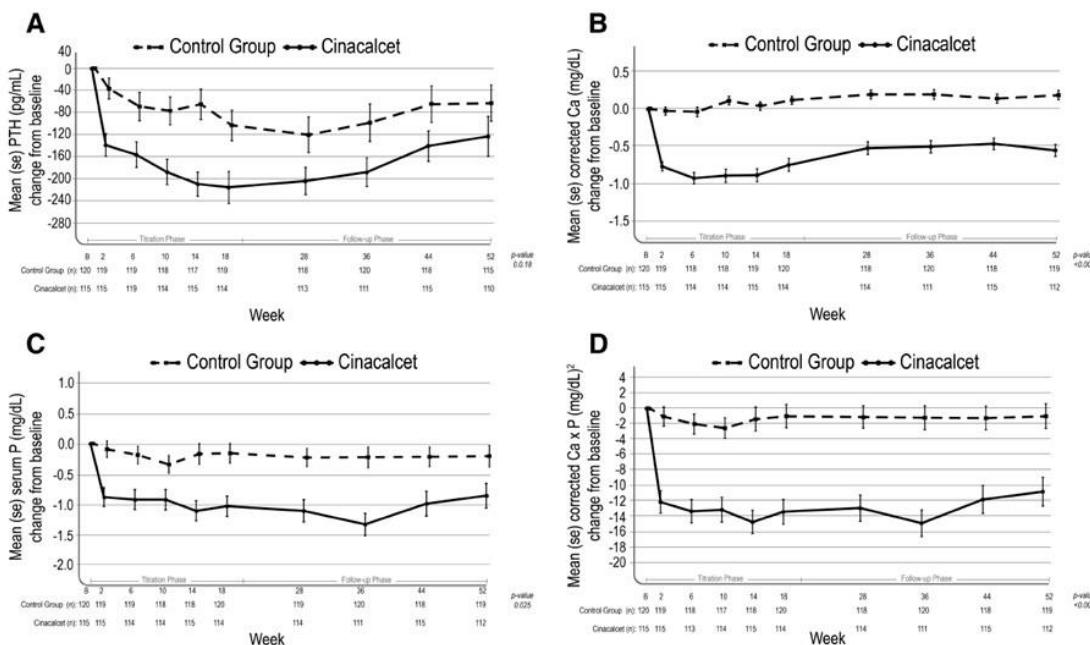
Table: CaR tissue distribution and putative functions

## Roles of Calcimimetics-銳克鈣

**The ADVANCE study: a randomized study to evaluate the effects of cinacalcet plus low-dose vitamin D on vascular calcification in patients on hemodialysis**



Nephrol Dial Transplant 2011; 26: 1327-1339



**Fig. 6.** The mean (SE) absolute change from baseline values at each study visit for (A) parathyroid hormone (PTH), (B) serum calcium, (C) serum phosphorus and (D) calcium-phosphorus product ( $\text{Ca} \times \text{P}$ ) according to treatment group. Cinacalcet (solid symbols) denotes subjects given cinacalcet plus low-dose vitamin D sterols; control group (shaded symbols) denotes subjects given flexible doses of vitamin D sterols.

Nephrol Dial Transplant 2011; 26: 1327-1339

## Roles of Calcimimetics-銳克鈣

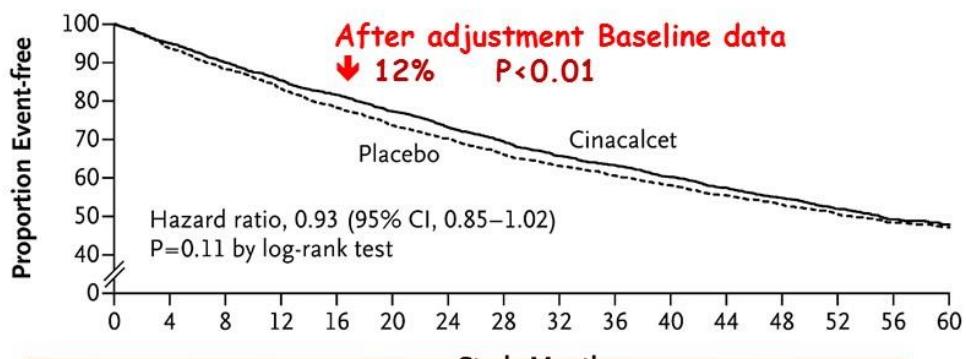
### Evaluation of Cinacalcet Therapy to Lower Cardiovascular Events (EVOLVE)

- Phase 3, double-blind, randomized, placebo-controlled trial evaluating the effects of cinacalcet on **mortality** and **cardiovascular events** in HD patients with **SHPT**.
- 3800 patients from 22 countries**
- Flexible use of traditional therapies will be permitted.
- The **primary end point** is the composite of time to all-cause **mortality** or first nonfatal **cardiovascular event**  
**Myocardial infarction, hospitalization for unstable angina, heart failure, or peripheral vascular disease, including lower extremity revascularization and nontraumatic amputation**

Clin J Am Soc Nephrol 2007; 898-905

## Intention-to-Treat Analysis of the Primary Composite Outcome and Its Components

### A Primary Composite End Point



No. at Risk  
Placebo  
Cinacalcet

Relative hazard of  
Primary end point 0.88 (95% CI, 0.79 to 0.97; P = 0.008)  
Death 0.86 (95% CI, 0.78 to 0.96; P = 0.006).

4 114

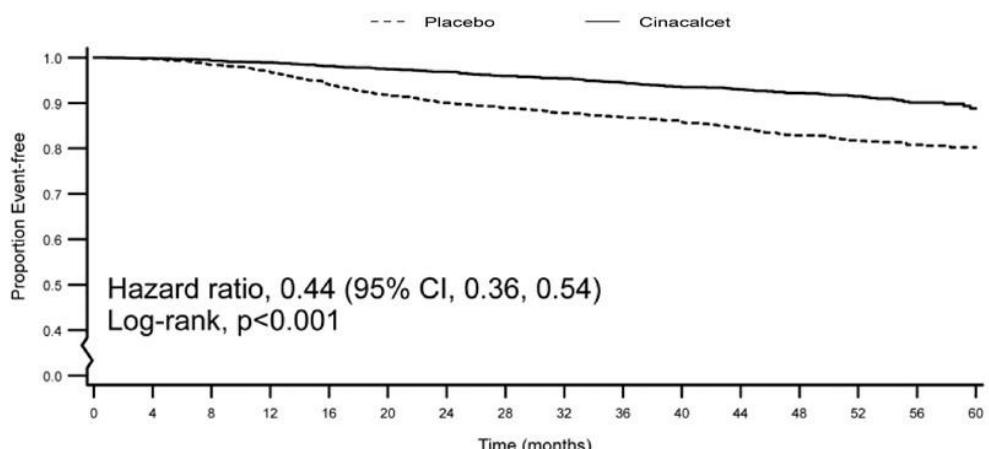
9 113

2-94

### Time to first parathyroidectomy

Event free

↓ Parathyroidectomy

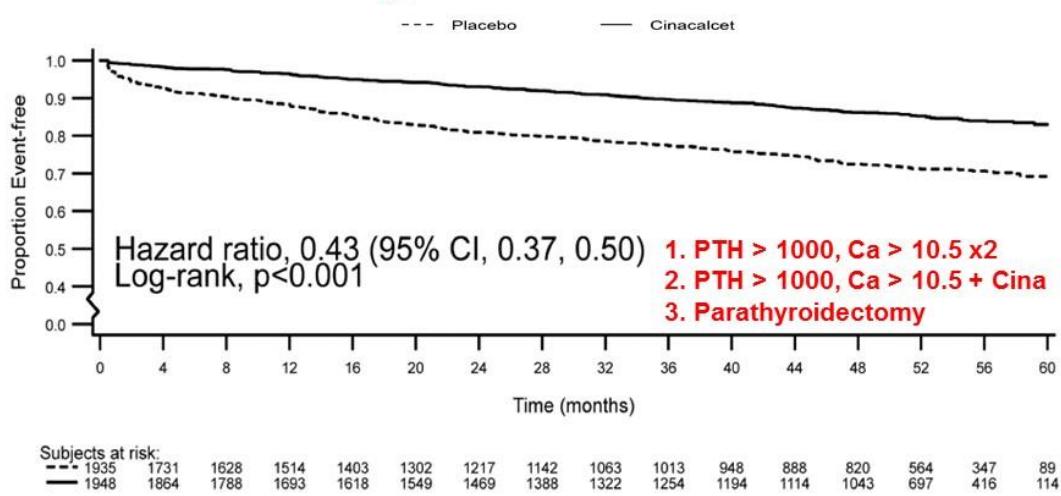


Subjects at risk:  
— 1935 1864 1776 1664 1546 1438 1346 1259 1177 1125 1062 995 931 632 389 103  
— 1948 1893 1821 1736 1670 1603 1531 1449 1383 1319 1254 1183 1110 743 441 125

N Engl J Med 2012; 367: 2482-94

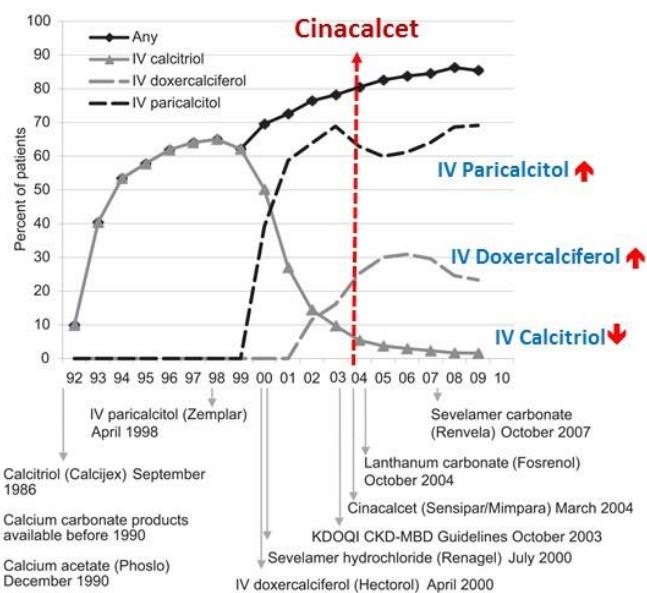
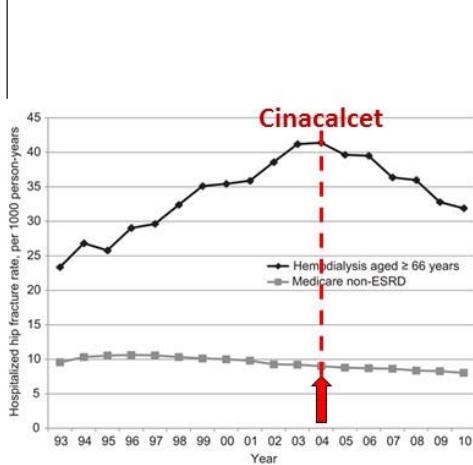
Time to first **severe unremitting hyperparathyroidism**  
**Event free ("tertiary")**

Severe Unremitting HPT



N Engl J Med 2012; 367: 2482-94

Trends in **Hip Fracture Rates** in US HD Patients  
**1993-2010 Medicare data**



Am J Kidney Dis 2013; 62(4):747-754

## Roles of Calcimimetics in SHPT-Summary

- Ca, P, CaxP 都 ↓
- Vascular calcification ↓
- 可增加 Calcitriol or active Vit D analog 的使用空間
- Bony fracture risk ↓
- CV events and mortality risk ↓ (after adjustment of baseline)
- Severe unremitting hyperparathyroidism ↓
- Parathyroidectomy ↓

### Etelcalcetide Phase 3 Studies Placebo-controlled trials

#### Key inclusion criteria

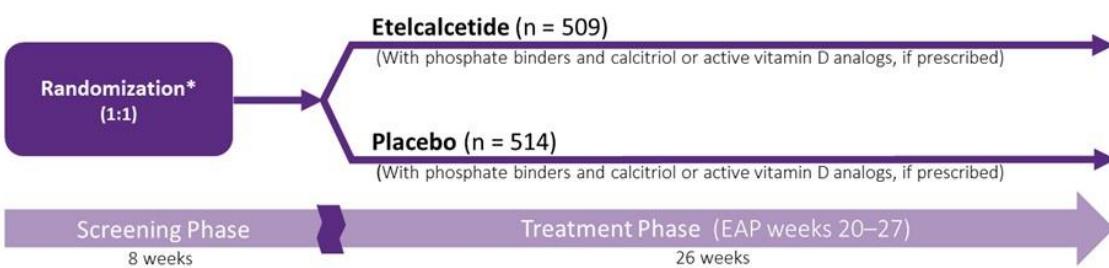
- Adults ≥ 18 years receiving HD 3 times a week for ≥ 3 months
- Two consecutive PTH levels > 400 pg/mL and cCa ≥ 8.3 mg/dL on separate days within 2 weeks before randomization
- No substantial dose change of calcium supplements, phosphate binders, dialysate calcium, or active vitamin D for 4 weeks before screening
- No participation in another study of an IP

#### Key exclusion criteria

- Received cinacalcet within 4 weeks of study or during study
- PTX within 3 months prior to dosing
- Anticipated or scheduled kidney transplant during study period
- Known sensitivity to any of the products or components
- Prior participation in a clinical trial of etelcalcetide
- Unstable medical condition based on medical history, physical examination, and routine laboratory tests or judged unstable in the investigator's opinion
- History of any illness, which in the investigator's opinion, might confound the results of the study or pose additional risk

Block GA, et al. JAMA. 2017;317:146-155.

## Study Design



- Etelcalcetide or placebo administered as bolus into the venous line of the circuit post-dialysis for 26 weeks
- Dose up titrated from 5 mg in 2.5 or 5 mg increments at 4-week intervals until PTH  $\leq$  300 pg/mL to a maximum of 15 mg
- IP held if PTH < 100 pg/mL (x 2), cCa < 7.5 mg/dL or symptomatic hypocalcemia

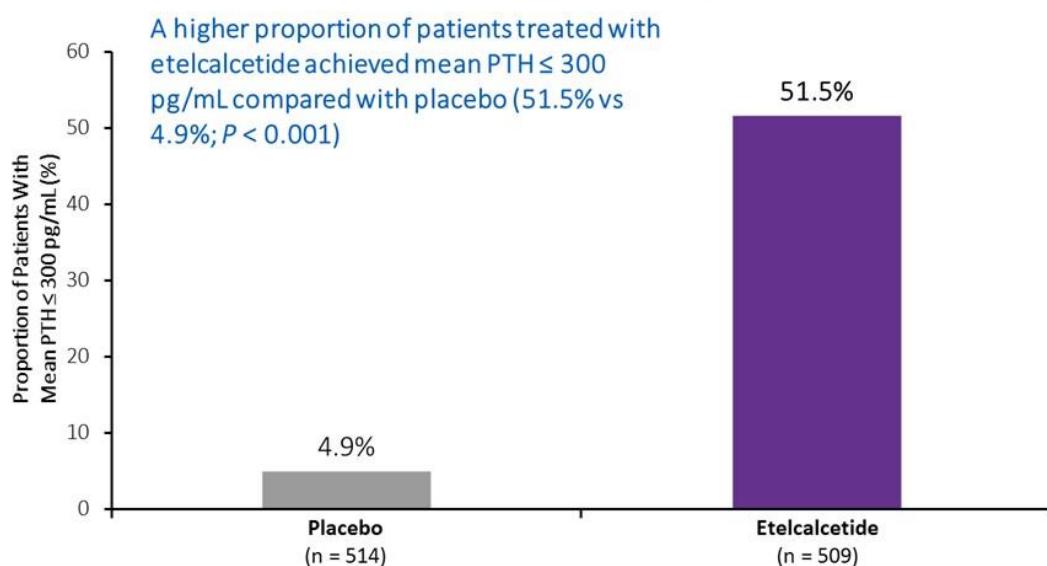
Block GA, et al. *JAMA*. 2017;317:146-155.

## Baseline Patient Characteristics

Variable	Placebo (n = 514)	Etelcalcetide (n = 509)
Age	58.1 (14.3)	58.4 (14.6)
Sex, n (%)		
Female	209 (40.7)	196 (38.5)
Male	305 (59.3)	313 (61.5)
BMI, kg/m <sup>2</sup>	28.59 (6.87)	28.83 (7.74)
iPTH, pg/mL	835.9 (477.0)	846.9 (492.6)
cCa, mg/dL	9.65 (0.65)	9.64 (0.66)
Phosphate, mg/dL	5.80 (1.53)	5.86 (1.59)
cCa x P, mg <sup>2</sup> /dL <sup>2</sup>	55.96 (15.15)	56.34 (15.41)

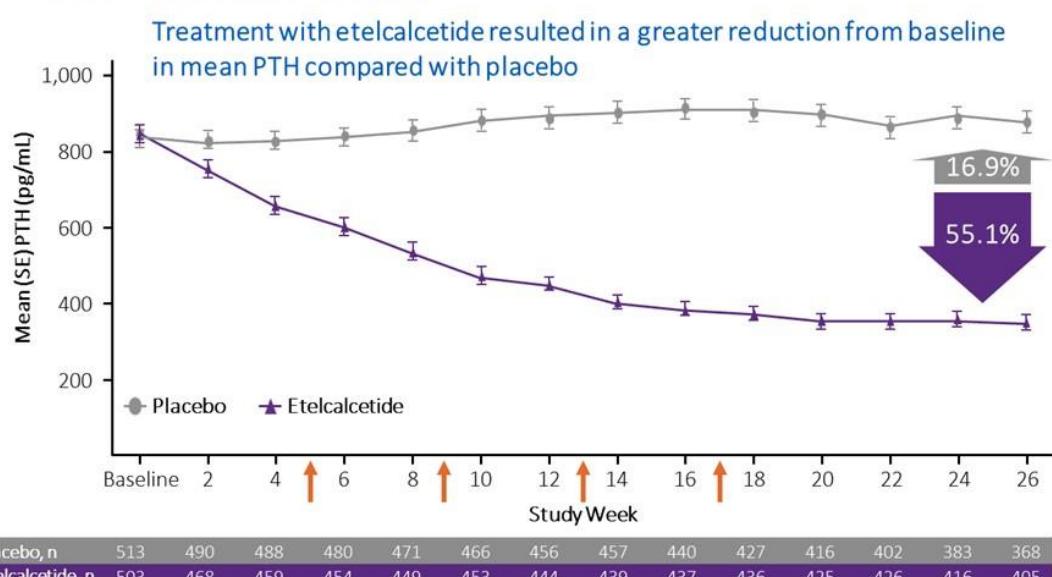
Block GA, et al. *JAMA*. 2017;317:146-155.

## A Higher Proportion of Patients Randomized to Etelcalcetide Achieved PTH ≤ 300 pg/mL



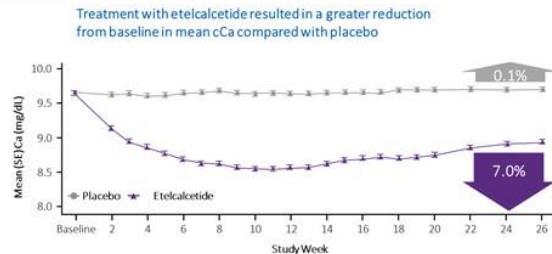
Block GA, et al. JAMA. 2017;317:146-155.

## Mean PTH Over Time

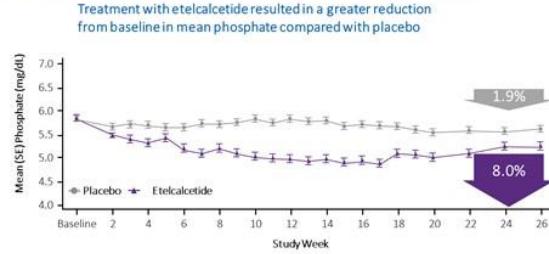


Block GA, et al. JAMA. 2017;317:146-155.

### Mean cCa Concentrations Over Time

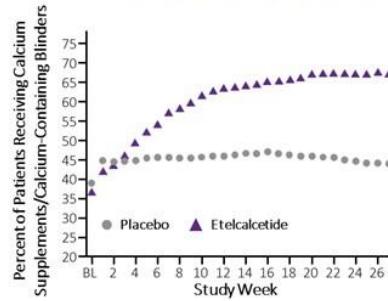


### Mean Phosphate Concentrations Over Time

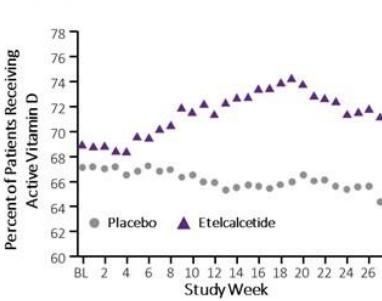


### Percent of Patients Receiving Calcium Supplements/Calcium-Containing Binders or Active Vitamin D Analogs

Use of calcium supplements/calcium-containing binder by study week



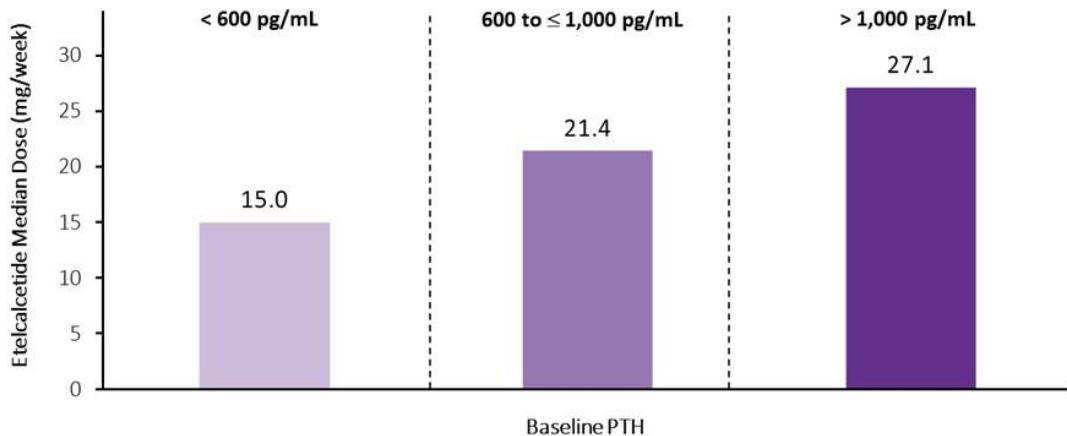
Use of active vitamin D analog by study week



Block GA, et al. JAMA. 2017;317:146-155.

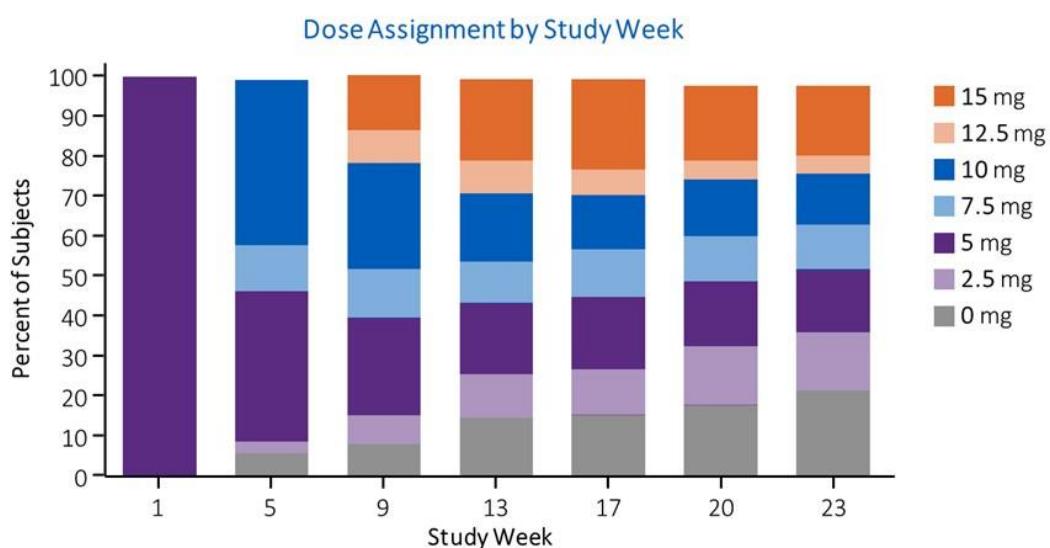
### Patients With Lower Baseline PTH Levels Typically Required Lower Doses of Etelcalcetide During the EAP

#### PTH



Block GA, et al. JAMA. 2017;317:146-155.

## Etelcalcetide Dose at Selected Study Weeks



Block GA, et al. *JAMA*. 2017;317:146-155.

## Safety Summary

AEs <sup>1</sup>	Placebo (n = 513) %	Etelcalcetide (n = 503) %
All AE	80	92
Blood calcium decreased	10.1	63.8
Muscle spasms	6.6	11.5
Diarrhea	8.6	10.7
Nausea	6.2	10.7
Vomiting	5.1	8.9
Headache	6.0	7.6
Hypocalcemia	0.2	7.0
Hyperkalemia/increased potassium	2.1	4.4
Death	2.9	2.2

- Hyperkalemia was reported twice as often in the etelcalcetide group; detailed review of these events showed no consistent risk factors or associated events<sup>1</sup>
- Rates of death, adjudicated major nonfatal CV events, and seizures were similar in both treatment groups<sup>2</sup>

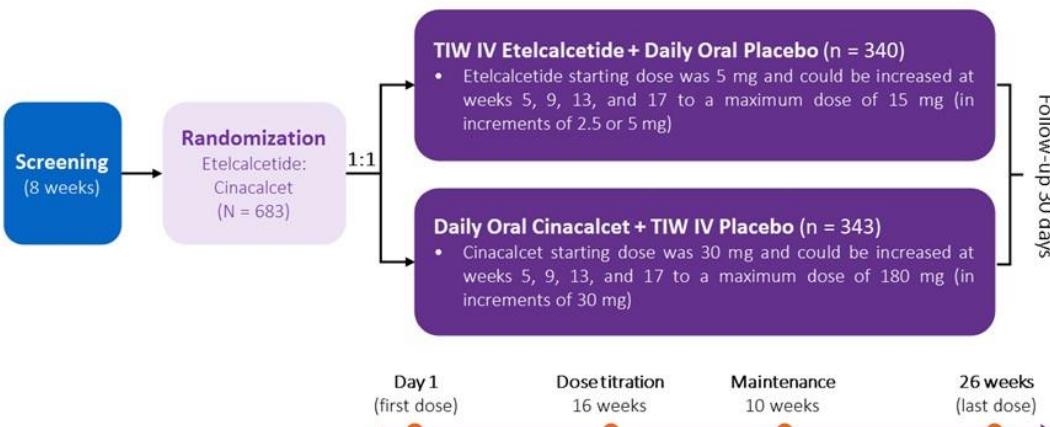
Block GA, et al. *JAMA*. 2017;317:146-155.

## Etelcalcetide Phase 3 Studies

### Head-to-Head trial

## Study Design

Randomized, active-control, double-blind, double-dummy, phase 3, 26-week, dose-titration trial



Block GA, et al. JAMA. 2017;317:156-164.

## Head-to-Head trial

### Study Population

#### Key eligibility criteria

- Predialysis serum PTH value > 500 pg/mL
- Serum albumin cCa ≥ 8.3 mg/dL
- No cinacalcet use for 3 months before the first screening laboratory assessments
- Dialysate calcium concentration ≥ 2.5 mEq/L for at least 4 weeks prior to screening
- Stable dose of vitamin D sterols for 4 weeks, calcium supplements for 2 weeks, and phosphate binders for 2 weeks prior to screening

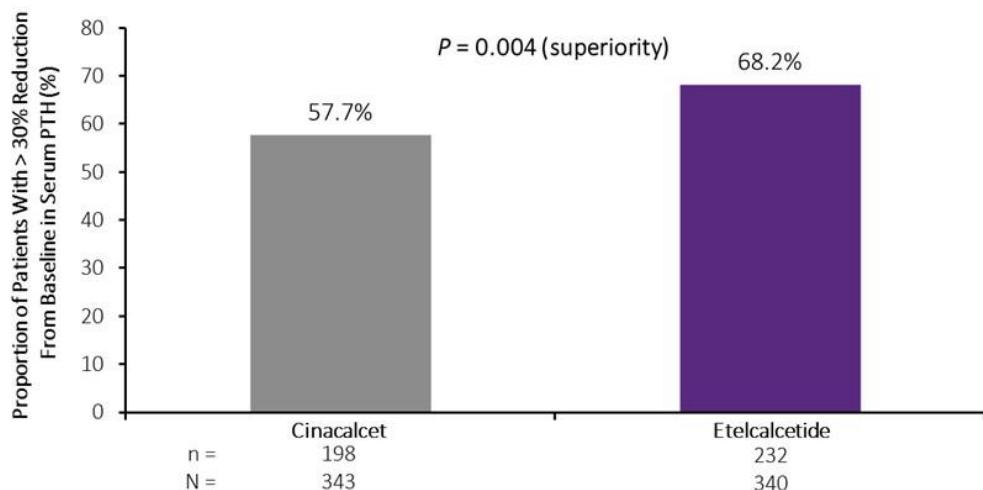
Block GA, et al. JAMA. 2017;317:156-164.

## Baseline Characteristics

	Cinacalcet (n = 343) n (%)	Etelcalcetide (n = 340) n (%)	Total (N = 683) n (%)
Male, n(%)	192 (56.0)	192 (56.5)	384 (56.2)
Age, mean years (SD)	55.3 (14.4)	54.0 (13.8)	54.7 (14.1)
Race—n (%)			
Asian	7 (2.0)	9 (2.6)	16 (2.3)
Black (or African American)	52 (15.2)	54 (15.9)	106 (15.5)
White	277 (80.8)	261 (76.8)	538 (78.8)
Dialysis vintage—n (%)			
0 –≤ 1 year	48 (14.0)	46 (13.5)	94 (13.8)
> 1 –≤ 5 year	146 (42.6)	149 (43.8)	295 (43.2)
> 5 year	149 (43.4)	145 (42.6)	294 (43.0)
Dialysate Ca ≥ 3 mEq/L, n (%)	154 (44.9)	149 (43.8)	303 (44.4)
SBP, mean (SD)	130.1 (23.6)	131.2 (23.9)	130.6 (23.7)
DBP, mean (SD)	72.6 (13.8)	73.1 (14.1)	72.8 (13.9)
PTH (pg/mL), mean (SD)	1,139 (707)	1,092 (623)	1,116 (666)
cCa (mg/dL), mean (SD)	9.6 (0.7)	9.7 (0.7)	9.6 (0.7)
P (mg/dL), mean (SD)	5.8 (1.6)	5.8 (1.7)	5.8 (1.6)

Block GA, et al. JAMA. 2017;317:156-164.

## Proportion of Patients Achieving > 30% Reduction in Serum PTH During the EAP



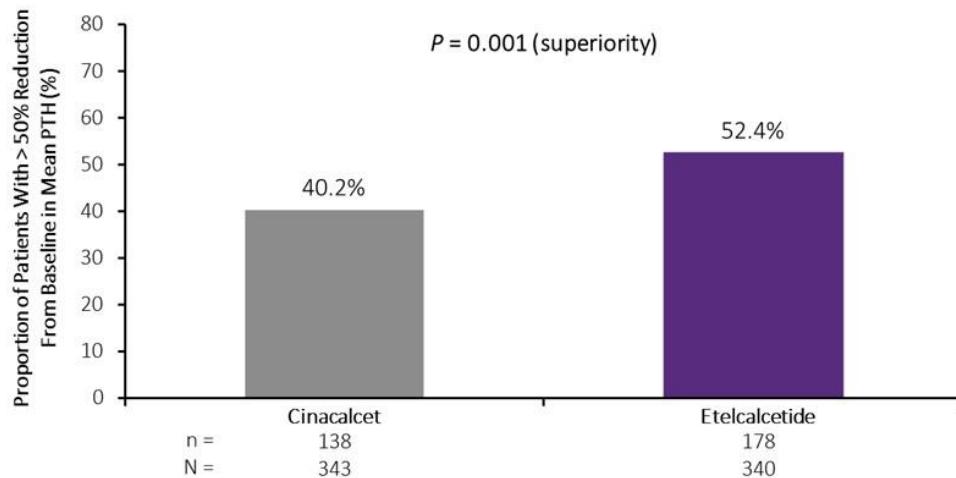
The estimated treatment difference (cinacalcet – etelcalcetide) was –10.5% (95% CI –17.5%, –3.5%; noninferiority was met; *P* = 0.004 for superiority)

EAP was defined as weeks 20–27; CI = confidence interval; EAP = efficacy assessment phase; PTH = parathyroid hormone.

Block GA, et al. JAMA. 2017;317:156-164.

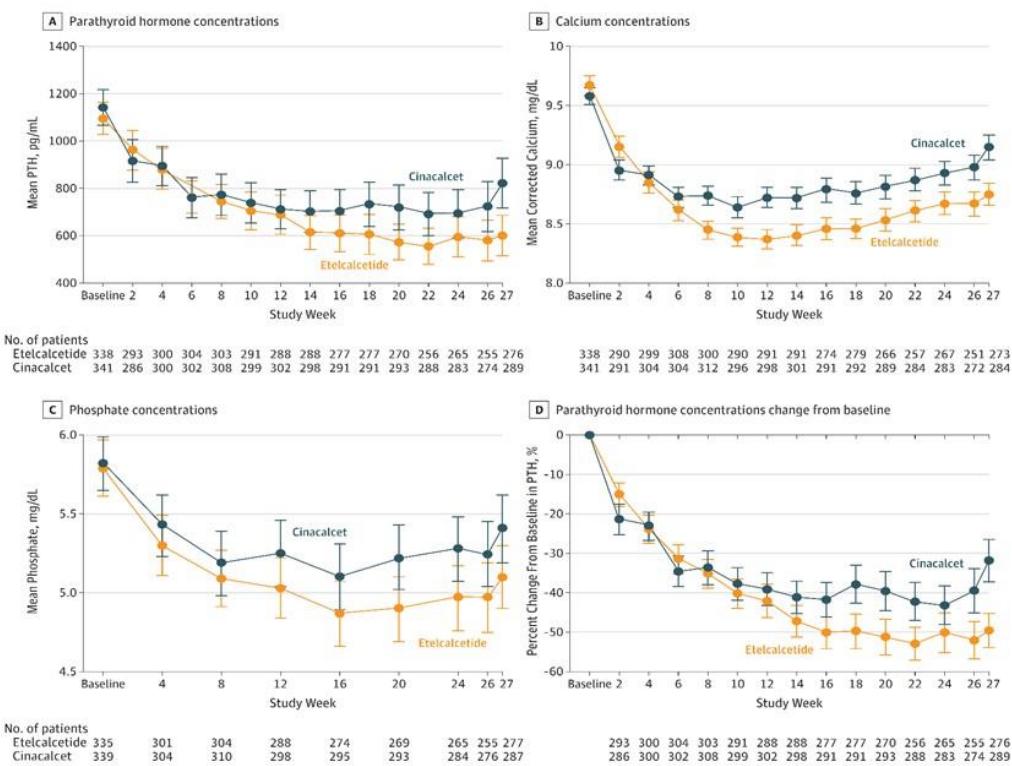
## Secondary Endpoint:

Proportion of Patients Achieving > 50% Reduction in Serum PTH During the EAP



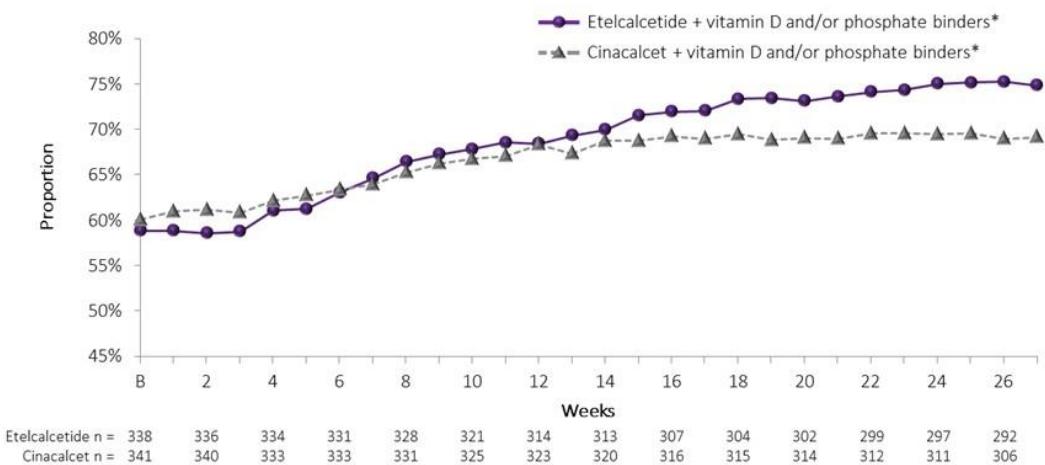
The proportion of patients achieving > 50% reduction from baseline in serum PTH was greater with etelcalcetide vs cinacalcet (52.4% vs 40.2%;  $P = 0.001$ )

Block GA, et al. JAMA. 2017;317:156-164.



Block GA, et al. JAMA. 2017;317:156-164.

## Use of Calcitriol and Vitamin D Analogs Over Time<sup>1</sup>



Block GA, et al. JAMA. 2017;317:156-164.

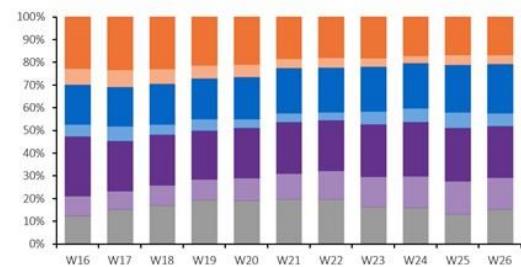
## Safety Summary: TEAEs ( $\geq 5\%$ )\*

Preferred Term	Cinacalcet (N = 341) n (%)	Etelcalcetide (N = 338) n (%)
Blood calcium decreased <sup>a</sup>	204 (59.8)	233 (68.9)
Nausea	77 (22.6)	62 (18.3)
Vomiting	47 (13.8)	45 (13.3)
Hypotension	10 (2.9)	23 (6.8)
Headache	24 (7.0)	22 (6.5)
Muscle spasms	20 (5.9)	22 (6.5)
Diarrhea	35 (10.3)	21 (6.2)
Hypertension	23 (6.7)	21 (6.2)
Anemia	15 (4.4)	17 (5.0)
Hypocalcemia	8 (2.3)	17 (5.0)
Pain in extremity	14 (4.1)	17 (5.0)
Bronchitis	17 (5.0)	5 (1.5)

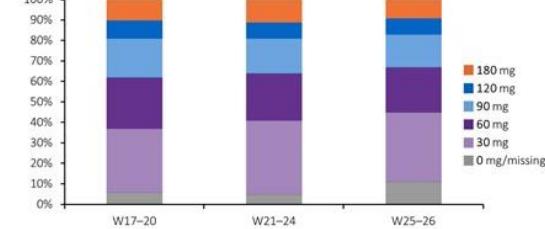
TEAE = treatment-emergent adverse event.

Block GA, et al. JAMA. 2017;317:156-164.

Etelcalcetide Dose Level by Study Week



Cinacalcet Dose Level by Study Period



The median (IQR) average **weekly** etelcalcetide dose during the EAP was 15 mg (9.2–30.0 mg);  
The median average **daily** cinacalcet dose was 51.4 mg (26.4–80.4 mg)

EAP was defined as weeks 20–27. EAP = efficacy assessment phase

Block GA, et al. JAMA. 2017;317:156-164.

## Case sharing

### 次發性副甲狀腺功能亢進的處理原則

- 常規三個月抽一次iPTH
- Normal iPTH<300 pg/ml
- iPTH>300 pg/ml
  - 加強飲食衛教,P binder, nutritional Vit D
  - Oral active Vit D3
  - or IV Calcijex use ( F/U Ca/P Q2W)  
Hold if Ca×P>55, P>5.5 or Ca>10.5
- Parsabiv use
  - F/U Ca/P Q2W
  - F/U iPTH QM

鴻仁健康診所

# 單張

表單編號:HDR-A0003(3)

單張

4月	1.3.5					預計 支 費打 支
	一	二	三	四	五	
		1	2	3	4	5
6 藍鑑鑄 藍易持	7	8 藍鑑鑄 藍易持	9	10 藍鑑鑄 藍易持	11	12
13 藍支 藍易持	14	15 藍支 藍易持	16	17 藍支 藍易持	18	26
27 藍鑑鑄 藍易持	28	29 藍鑑鑄 藍易持	30	31 藍鑑鑄 藍易持	25	

備註:Rescue3無運動在3A模式的原因



## 南部洗腎診所臨床經驗分享 - 郭 Ms

- ESRD on maintenance HD since 2016/04, renal artery stenosis s/p PTA, hypertension

			2016/5/12	2016/6/2	2016/7/7	2016/8/4	2016/9/8	2016/10/6	2016/11/3	2016/12/8
Ca			10.2	9.2	9.3	10	8.9	9.5	9.6	9.9
P			6	5.5	6.7	7.5	7.2	6.4	5.6	6
iPTH			725.3			405.3			843.3	
Alk-p			210	359	338	390	756	1101	1180	1160

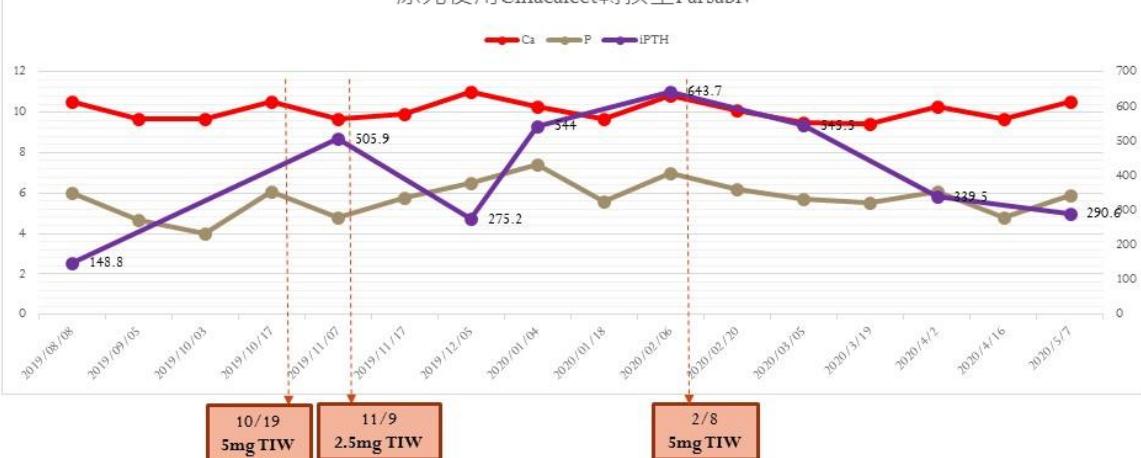
	2017/1/5	2017/2/2	2017/3/2	2017/4/6	2017/5/4	2017/6/8	2017/7/6	2017/8/3	2017/9/7	2017/10/3	2017/11/2	2017/12/7
Ca	10	10.9	10	10.2	9.5	9.2	10.5	9.8	10.6	9.9	9.6	10.4
P	2.6	6.2	6.1	3.2	2.1	4	6.5	6.3	5	7.1	4.5	5.4
iPTH		1120			586			252			262	
Alk-p	922	469	550	390	331	172	158	156	129	115	122	119

- Renagel use, 不吃CaCO<sub>3</sub>
- 2016年底開始在VGH-KS 接受Prolia 治療, 合併使用 Cinacalcet 25mg qd + Oral active Vit D3

## Before Parsabiv treatment

	2019/1/3	2019/1/31	2019/3/7	2019/4/2	2019/5/1	2019/6/1	2019/7/6	2019/8/8	2019/9/5	2019/10/3	2019/10/17
Ca	8.8	8.5	8.7	10.2	10.7	9	10	10.5	9.7	9.7	10.5
P	4.4	4.8	5.5	6.6	5.6	5	4.6	6.0	4.7	4	6.1
iPTH		309			200.9			148.8			
Alk-p	149	134	87	84	67	72	100	105	103	91	

- Prolia 總共打了四劑(2017,2018),2019停 Prolia, 繼用Cinacalcet + Rocaltrol
- Stable iPTH and Alk-p
- 但因為 Cinacalcet 25mg qd有明顯GI upset 症狀,8月自行停藥。
- 建議Parsabiv treatment



2020/01 停用Rocaltrol, 開始併用IV Calcijex  
 P不穩定, Hypocalcemia(-)  
 GI symptoms(-)  
 使用Parsabiv六個月, iPTH ↓ 42.5%

### 南部洗腎診所臨床經驗分享--郭林 Ms

- ESRD on maintenance HD since 1997
- Poor control of iPTH, Ca, P for years.
- CaCO<sub>3</sub>, Renagel, 遵從性不佳
- 曾接受 Cinacalcet 25mg qd for one month, 但因為GI症狀而終止。

	2019/1/3	2019/1/31	2019/3/7	2019/4/2	2019/5/1	2019/6/1	2019/7/5	2019/8/08	2019/9/05
Ca	10.4	9.6	10.4	9.9	10.1	10	9.3	10.3	9.6
P	9	5.9	7	5.9	6.3	6.7	4.9	5.7	5.3
iPTH		750.8			950			764.8	
Alk-p	112	122	289	125	124	95	89	203	95



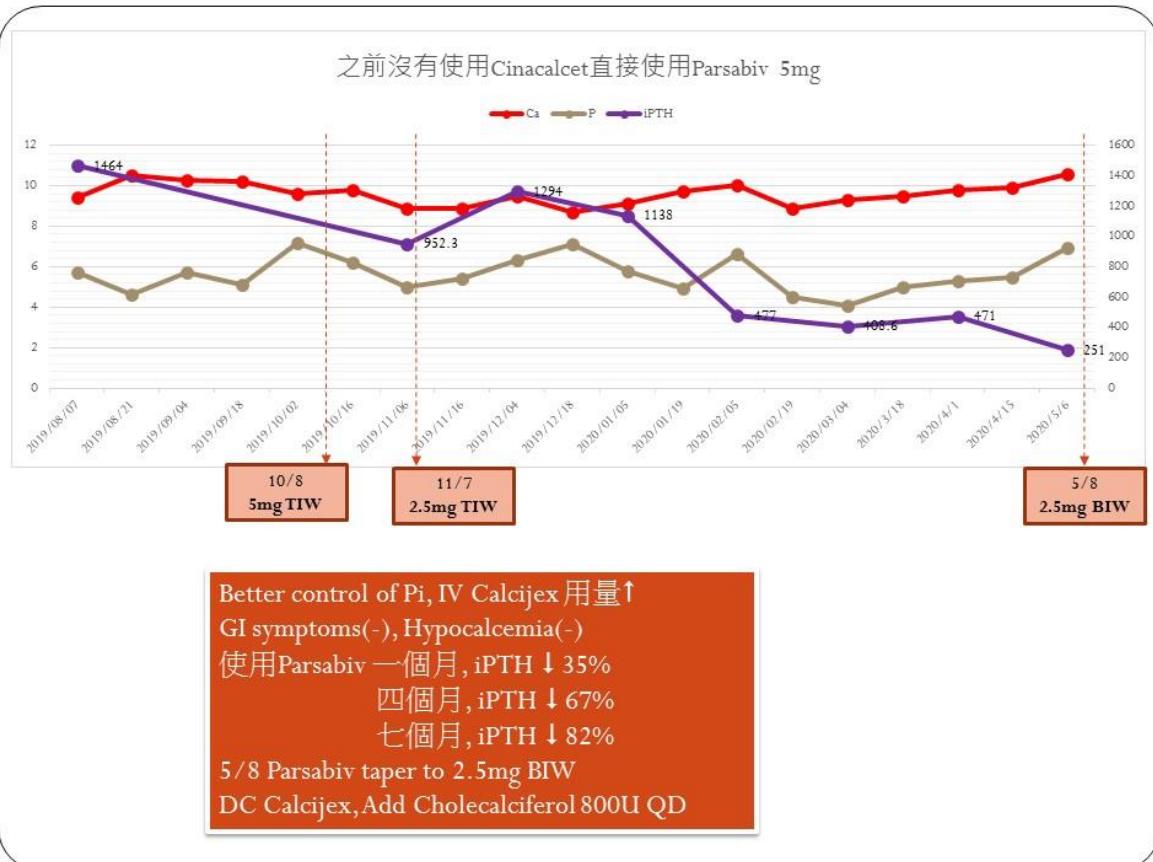
202001 開始併用IV Calcijex  
 GI symptoms(-), Hypocalcemia(-)  
 使用Parsabiv一個月, iPTH ↓ 32%  
 三個月, iPTH ↓ 69%

### 南部洗腎診所臨床經驗分享 - 張 Ms

- ESRD on maintenance HD since 201703, hypertension, 2<sup>nd</sup> hyperparathyroidism (201808外院轉入)
- P binder compliance: OK, IV calcijex(+)

	2019/1/2	2019/1/30	2019/3/6	2019/4/1	2019/5/1	2019/6/1	2019/7/5	2019/8/07
Ca	10.4	9.8	9.9	9.8	8.7	9	9.6	9.4
P	4.6	5.9	6	6.4	7	6.4	5.9	5.7
iPTH		687.7			1750			1464
Alk-p	96	77	83	78	56	77	94	94

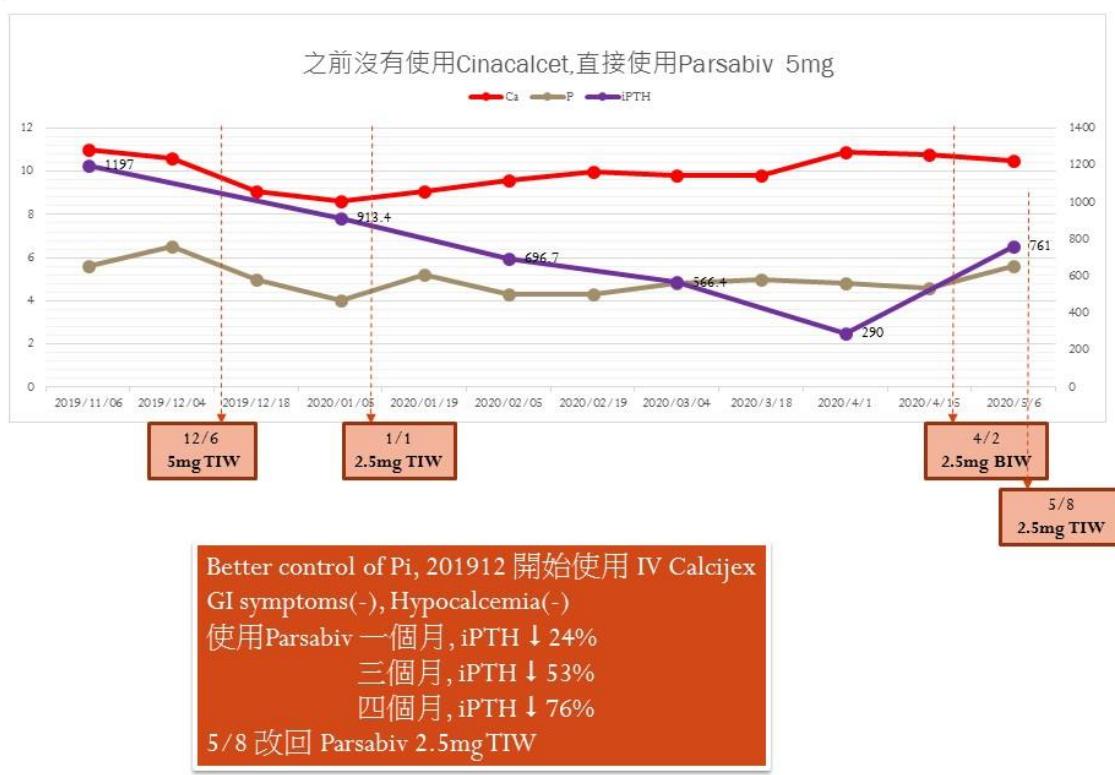
- Poor control of Pi, Calcijex 常不能打
- Cinacalcet(-)
- Introduce Parsabiv



## 南部洗腎診所臨床經驗分享 - 施 Mr

- ESRD on maintenance HD since 20160307, HCC s/p liver transplantation, HCV(+) post treatment
- P binder compliance: OK
- Poor control of Pi.
- IV or oral active Vitamin D3(-)

	2019/1/2	2019/1/30	2019/3/6	2019/4/1	2019/5/1	2019/6/1	2019/7/5	2019/8/7	2019/9/4	2019/10/2
Ca	9.6	9.6	10	10.5	10.5	11	10.9	11.9	12	10.7
P	6.1	6.6	7.1	6.1	6.6	4.9	5.7	5.5	6.9	9.0
iPTH		408.8			838.6			1096		
Alk-p	102	107	123	115	106	113	111	119	106	92



### 南部洗腎診所臨床經驗分享 - 謝 Mr

- ESRD on maintenance HD since 201301, hypertension.
- Transfer to our HD room for 4+ years.
- P binder compliance: OK
- 201911 Start IV Calcijex treatment.

	2019/1/2	2019/1/30	2019/3/6	2019/4/1	2019/5/1	2019/6/1	2019/7/5	2019/8/7	2019/9/4	2019/10/2	2019/11/6	2019/12/4	2019/12/18
Ca	9.9	9.7	9.9	9.7	10.1	10.1	10.1	10	10.4	10.3	10.7	11	9.9
P	5.6	5.6	7.5	7.5	5.6	4.6	4.9	5.6	5.7	3.1	5.3	7.2	6.4
iPTH		553.7			1035			1278			1198		
Alk-p	104	104	123	97	101	113	116	139	143	111	151	145	

- Calcijex一打, Pi 就高,  
 202002 iPTH: 1093



IV Calcijex 用量增加, Unstable level of Pi  
GI symptoms(-), Hypocalcemia(-)  
使用Parsabiv 二個月, iPTH ↓ 52%  
5/8 DC Calcijex, Add Cholecalciferol 1600U QD

### 朱 Mr--ESRD HD for 2 years, DM, HTN, HCC s/p TAE

	2019/7/5	2019/8/7	2019/9/4	2019/10/21	2019/11/6	2019/12/25	2020/1/5	2020/2/5	2020/3/4	2020/4/1	2020/4/15	2020/5/6
Ca	9.3	9.9	9.6	8.6	8.5	8.4	8.8	8.8	8	8.9	9.3	9.4
P	5.1	6.2	4.1	7.4	4.8	5.4	4.6	6.7	5.7	5	3.1	3.6
iPTH		690.2			606.4			423.2			226	
Alk-p	136	139	162	99	144	146	137	146	141	171	204	

銳克鈣 25mg QD      3/25 Parsabiv 2.5mg TIW

### 張簡 Ms-- ESRD HD for 7 years, DM, HTN

	2019/8/7	2019/8/21	2019/9/4	2019/9/18	2019/10/2	2019/10/16	2019/11/6	2019/11/20	2019/12/4	2019/12/18	2020/1/3	2020/1/18	2020/1/30	2020/2/19	2020/3/4	2020/3/18	2020/4/1	2020/4/15	2020/5/6
Ca	10	9.4	10.7	10.3	10.3	9.9	10.2	10.5	10.6	10.9	11.8	10	9.9	9.8	10.1	10.6	10.9	9.9	9.8
P	+1	+9	2.1	+5	+6	2.2	+1	+4	+6	2.1	2	6.9	8.4	5.6	7.2	3.6	6.9	3.6	+
iPTH	806.7						474.5					944.4						394.7	
Alk-p	110	88		66		77		112		99		112		106		113		113	

Calcijex use      4/2 Parsabiv 5mg TIW  
5/8 Parsabiv 2.5mg TIW

## Etelcalcetide 使用心得

- Parsabiv 是一個治療SHPT除了Cinacalcet外,很有效的一個藥物選擇。
- 使用Parsabiv, P 下降之後, active Vitamin D 的使用空間變大, iPTH 下降的效果更好。但 P 應儘量控制<4.5。
- GI 副作用比Cinacalcet 少見。
- 使用藥物的遵從性比Cinacalcet好。
- 長期費用比Cinacalcet 少些。  
(Parsabiv 2.5 mg TIW < Cinacalcet 25mg qd)

## 可能想問的問題

- Parsabiv 是否可以停藥?
- Parsabiv vs Cinacalcet, 該選哪一種?
- Cinacalcet 治療無效, 是否可以改 Parsabiv? 是否會有效?
- Parsabiv 的 GI 副作用是否有比 Cinacalcet 少 ?

# Etelcalcetide in Patients on Hemodialysis with Severe Secondary Hyperparathyroidism. Multicenter Study in "Real Life"

Table 1. Patients' Characteristics.

	Total Group (n = 168)	Naïve Group (n = 56)	Switch Group (n = 112)	p (Naïve vs. Switch)
Age (years)	61 ± 14	64 ± 14	59 ± 14	0.04
Male (%)	57	52	60	0.32
Dialysis vintage (month)	58 (IQR 32–102)	35 (IQR 14–63)	69 (IQR 48–120)	<0.001
Diabetes (%)	25	31	22	0.23
Cardiovascular comorbidities (%)	73	70	75	0.53
iPTH (pg/ml)	636 (IQR 493–916)	602 (IQR 509–800)	664 (IQR 495–947)	0.67
Serum Calcium (mEq/L)	9.0 ± 1.0	9.1 ± 0.7	9.0 ± 1.1	0.60
Serum Phosphate (mg/dL)	5.6 ± 1.4	5.5 ± 1.4	5.6 ± 1.4	0.83
Alkaline Phosphate (U.I./L)	131 (IQR 83–201)	111 (IQR 74–159)	148 (IQR 88–221)	0.02
Hb (gr/dL)	11.1 ± 1.4	11.0 ± 1.2	11.1 ± 1.4	0.58
ESA treatment (%)	87	88	87	0.97
Phosphate binders therapy (%)	96	93	97	0.17
Calcium containing binders (%)	18	25	14	0.09
Vitamin D therapy (%)	75	83	71	0.09
Native Vitamin D therapy (%)	5	4	6	0.59
Previous cinacalcet treatment (%)	67	0	100	N/A

IQR, interquartile range; iPTH, intact parathyroid hormone; Hb, hemoglobin; ESA, erythropoietin-stimulating agent.

J. Clin. Med. 2019, 8, 1066

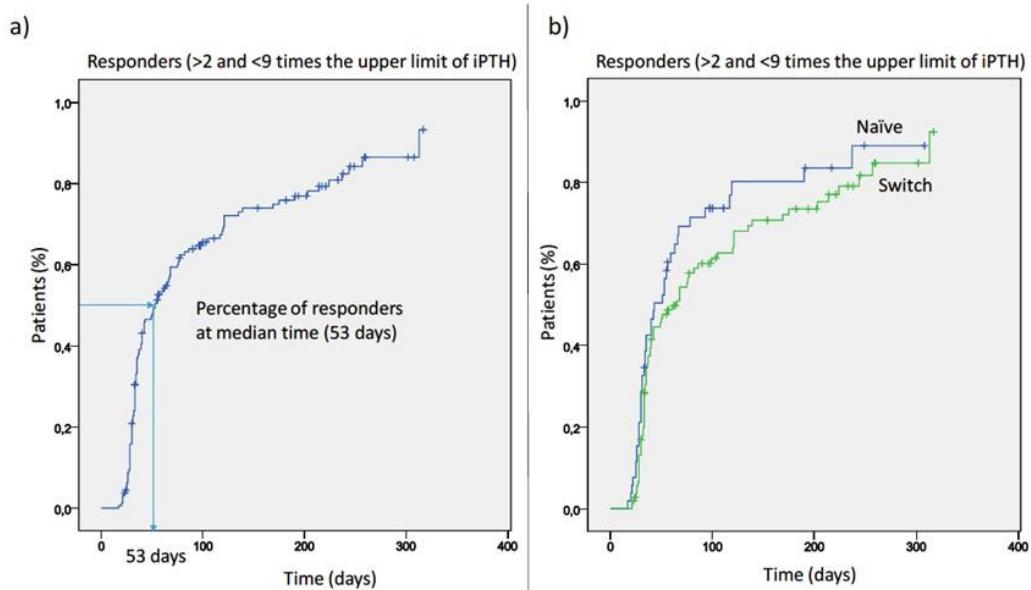


Figure 2. The median time for responders in the whole cohort (a) and differentiated for naïve patients and patients switched from cinacalcet to etelcalcetide (b).

### 三、109 年度會費繳交

109 年度會費於 109 年 1 月 1 日開始繳交，繳費資訊如下：

常年會費	
負責醫師	10000 元
非負責醫師	1000 元
醫院會友	1000 元

繳費方式	
郵政劃撥	戶名：台灣基層透析協會 帳號：50265614
銀行匯款或 ATM 轉帳	戶名：社團法人台灣基層透析協會 匯入行庫：合作金庫 台大分行 (銀行代碼：006，分行代碼：1346) 帳號：1346-717-033598

98-04-43-04 郵 政 劃 撥 儲 金 存 款 單									
收 款 帳 號	5 0 2 6 5 6 1 4	金 額	億	仟	萬	佰	萬	拾	萬
(阿拉伯 數字)									
◎寄款人請注意背面說明 ◎本收據由電腦印錄請勿填寫									
郵政劃撥儲金存款收據									
收款帳號戶名									
存款金額									
電腦紀錄									
經辦局收款章戳									
主 管：									
109 年度會費									
<input type="checkbox"/> 1.院所負責醫師：壹萬元 <input type="checkbox"/> ①開立個人捐款收據 <input type="checkbox"/> ②開立診所會費收據									
<input type="checkbox"/> 2.非負責醫師：壹仟元 (開立個人會費收據)									
<input type="checkbox"/> 3.醫院會友：壹仟元 (開立個人捐款收據)									
申請人請於瞭解「郵政儲金匯兌個人資料直接蒐集告知聲明」內容後，填妥本單據交郵局辦理。									
虛線內備供機器印錄用請勿填寫									

### 四、109 年度已繳納「院所負責醫師一萬元會費」名單

目前累計 279 家院所已繳納一萬元會費，請尚未繳納會費之院所務必繳交，謝謝！

基隆

泰安內科診所

安基診所

高士振診所

佳冠內科診所

元翔診所

佳基內科診所				
台北市				
安德聯合診所	洪永祥診所	宏林診所	元林診所	文林診所
晟幸診所	元泰診所	萬澤內科診所	安禾聯合診所	柏安診所
安仁診所	怡仁診所	怡德診所	慶如診所	百齡診所
華榮診所	杏心診所	和泰內科診所	康禾診所	佳德內科診所
東成診所	弘德診所	景安診所	匯安診所	
新北市				
安新診所	陳尚志診所	東暉診所	東辰診所	明暘診所
德澤診所	展源內科診所	輝德診所	漳怡內科診所	新庚診所
詠靜診所	匯康內科診所	宏明診所	佳永診所	承安聯合診所
祥佑診所	杏原診所	國城診所	廣泉診所	恩康診所
佳聖診所	逸原診所	逸守診所	逸安診所	逸全診所
康全診所	幸安診所	仁馨診所	晉康診所	益康診所
志豪診所	思原內科診所	昕隆診所	新莊新仁診所	家祥診所
新欣診所	安庚內科診所	戴良恭診所	欣禾診所	世康診所
怡安診所	仁暉診所	佳晟診所	元福診所	慧安診所
禾安診所	佳愛診所	佳佑診所	泓安內科診所	安旭診所
怡和診所	江生診所	仁美診所	仁川診所	富康診所
仁佳診所	仁謙診所	集賢內科診所	集安診所	
桃園				
中慎診所	佑霖診所	惠民診所	宏元診所	桃安診所
桃德診所	中庚診所	聖文診所	安慧診所	鑫庚內科診所
桃庚聯合診所	安庚內科診所	欣庚診所	和陽診所	安馨大溪診所
家誼診所	榮元診所	杏福診所	安禾診所	
新竹				

新竹安慎診所	安新診所	惠慎診所	竹東安慎診所	成民內科診所
祥仁內科診所	宏仁診所	康健診所	成功診所	
苗栗				
宏福診所	竹南診所	德安診所	長春診所	
台中				
長安診所	育恩診所	雅林診所	宜家診所	蔡精龍診所
信安診所	淨新診所	仁德診所	大業診所	旭康診所
漢寧診所	佳弘診所	興豐內科診所	高美內科診所	佳楊診所
東豐診所	京冠診所	佳福診所	瑞東診所	榮平診所
仁禾診所	晉安診所	傑安內科診所	東福診所	佑全診所
合安診所	佳仁內科診所	安新診所	榮曜診所	祐和診所
慶華診所	加安診所			
彰化				
建霖內科診所	健新內科診所	里仁診所	佳安內科診所	合濟診所
旭安診所	佳文內科診所	員美診所	安馨彰美內科診所	惠聖診所
雲林				
大安診所	崙安診所	宏德診所	惠腎診所	螺安診所
明德聯合診所	腎安診所			
嘉義				
宏醫診所	正安診所	安馨嘉義內科診所	家馨診所	康明診所
南投				
金生診所	草屯陳診所	農安診所	益民診所	安馨竹山內科診所
台南				
文賢內科診所	懷仁內科診所	迦南內科診所	陳相國聯合診所	康福內科診所
銓萃診所	榮銘內科診所	沅林內科診所	以琳內科診所	十全診所
光明內科診所	崇仁內科診所	林建任內科診所	昕安內科診所	立福內科診所

顏大翔內科診所	佑馨診所	蘇炳文內科診所	杏和診所	佳新診所
杏福內科診所	尚禾內科診所	泰祐診所	佳宜內科診所	欣姿診所
奇安內科診所	康健內兒科診所	陳冠文內科診所	弘典內科診所	福民內科診所
華康內科診所	謝智超達恩診所			
高雄				
新鴻遠診所	仁康診所	宗禾診所	愛欣診所	建安診所
明港診所	岡山內科診所	優彼高榮育仁診所	高健診所	偉仁健康診所
尚清診所	佑強診所	好生診所	茂田診所	鴻仁健康診所
高欣診所	為好診所	裕生診所	蔣榮福診所	健聖診所
路竹內科診所	幸安診所	五福診所	吳三江內科診所	揚銘診所
安泰診所	高美診所	興義診所	鴻源診所	湖康診所
安馨楠梓內科診所	佑鎮診所	高晟診所	田源診所	佳醫診所
佳澤診所	劉內兒科診所	佳生診所	芳民診所	長清診所
王禾診所	德恩內科診所	聖博診所	長新診所	
屏東				
沐民診所	仁佑診所	德家內科診所	德樹診所	立安診所
藍文君診所	大武診所	人晟診所	德埔診所	宇安診所
佳屏診所	東和內科診所	迦美診所		
宜蘭				
傳康診所	得安診所	吳得中診所	陳文貴診所	
花蓮				
懷德診所	維德診所	嘉恩診所		
台東				
東興內科診所	陳明正內科診所			
澎湖				
惠安診所				