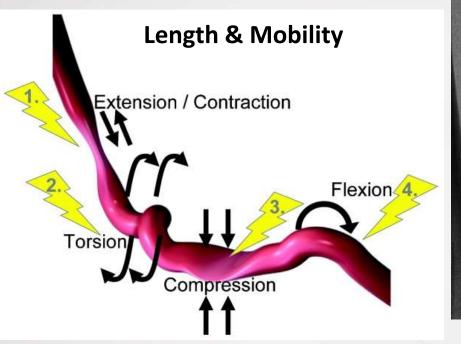
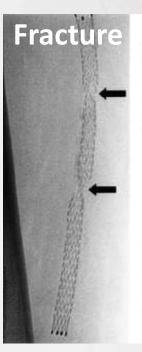


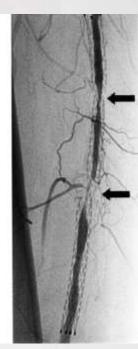
## My Practice with Zilver PTX

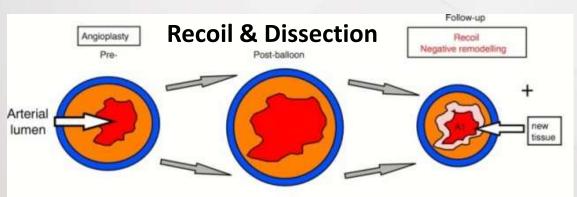
Associate Professor Bryan Yan
Interventional Cardiologist
MBBS, FRACP, FRCP (Edin), FESC, FACC
Prince of Wales Hospital
The Chinese University of Hong Kong

## **Challenges & Limitations of SFA Interventions**

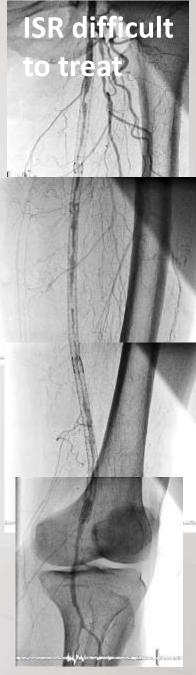












## **My SFA Intervention Wish List**



- ☐ Easy to perform or deliver
- ☐ High procedural success
- **□**Safe
- □ Long term efficacy vs. PTA & BMS
  - □Complex lesions (Long, Ca++, CTO, ISR)
  - Patency
  - □Clinical benefit
- ☐ Preserve future treatment options
- □ Cost effective









## **Drug Eluting Evolution**



- ~100% DES in coronary intervention
  - 1st (2002) ⇒ 4th Generation (now)
- Zilver PTX is the 1<sup>st</sup> & only DES for SFA (since 2009)

CE Mark 7F Avail. in HK

6F Avail. in HK (Jan)
USFDA approval (Nov)

6F Cogwheel Avail. in HK (May)

2009

2010

2011

2012

2013

2014

2015



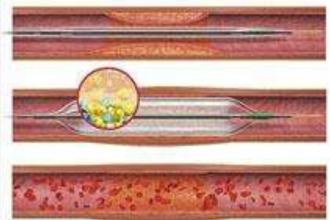


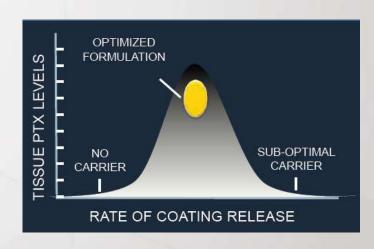


## **Drug Coated Balloons as Well**



- Paclitaxel
- Promising RCT outcomes for simple lesions vs. PTA
- Lack long term data on complex lesions
- Not all DCB the same because of different expedient
- Unpredictable drug delivery
- "Nothing left behind" vs. stents
- Same limitations as PTA
  - Dissections & recoils
  - Bail out stenting





## Is Stenting Still Necessary with DCB?



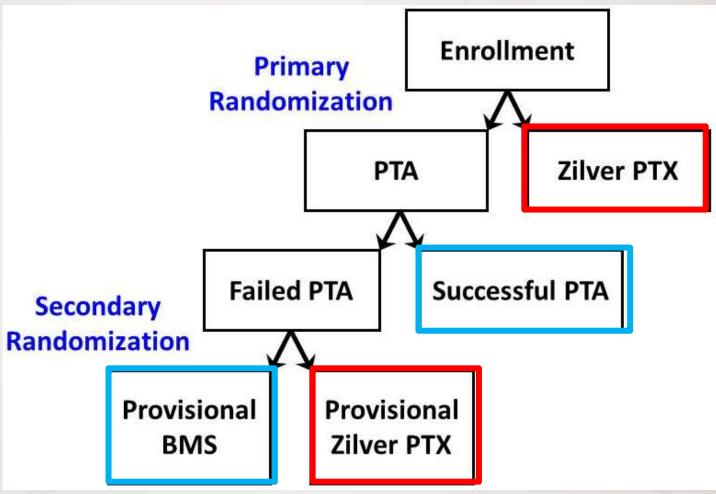
- Longer & more complex the lesion, more often a stent is required to treat residual stenosis & flow limiting dissection after balloon angioplasty
  - 20-50% TASC A-B lesions
  - 50-100% TASC C-D lesions

#### Similar after DCB

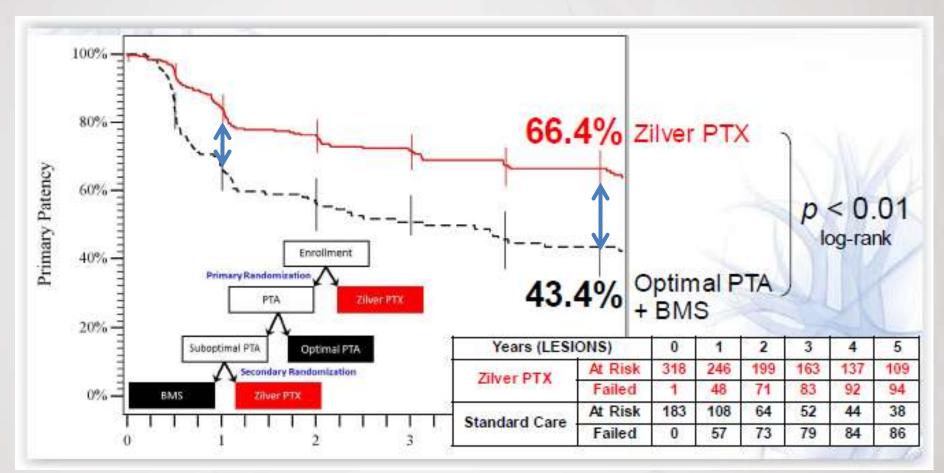
| Trial           | Trial Type | Lesion Length | Incidence of "Bail Out" stenting |
|-----------------|------------|---------------|----------------------------------|
| THUNDER         | DEB        | 7.5cm         | 4%                               |
| In.Pact SFA     | DEB        | 8.9cm         | 7.3%                             |
| Advance PTX     | DEB        | 10.5cm        | 29%                              |
| Schmidt A et al | . DEB      | 24cm          | 23.3%                            |
| Micari A et al. | DEB        | 7.6cm         | 12.3%                            |
| Zilver PTX RCT  | DES        | 9.7cm         | 50%                              |

## Zilver PTX RCT Design



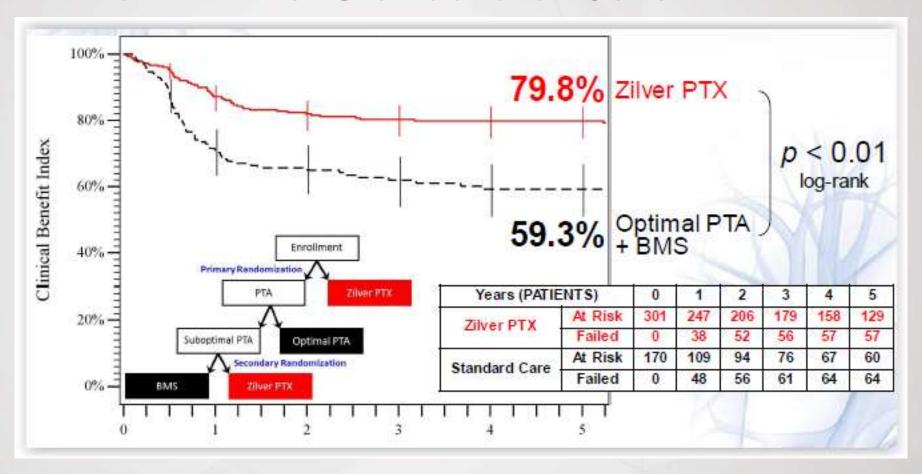


### 5 Year Primary Patency Zilver PTX vs. Standard of Care



- 41% reduction in restenosis compared to standard of care
- From year 1 to 5, relative separation increased 35%

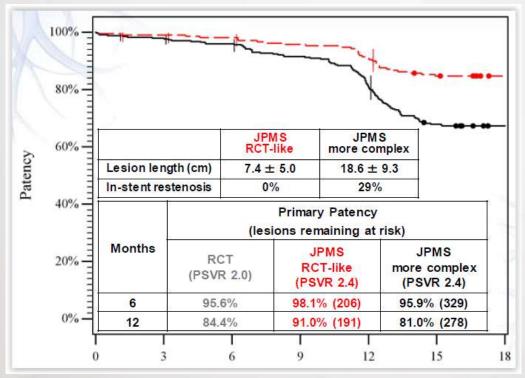
## 5 Year Clinical Benefit Index Zilver PTX vs. Standard of Care



 Zilver PTX superior rate of freedom from persistent or worsening claudication, rest pain, ulcer or tissue loss

### 'Real World' Complex Lesions (Japan PMS)

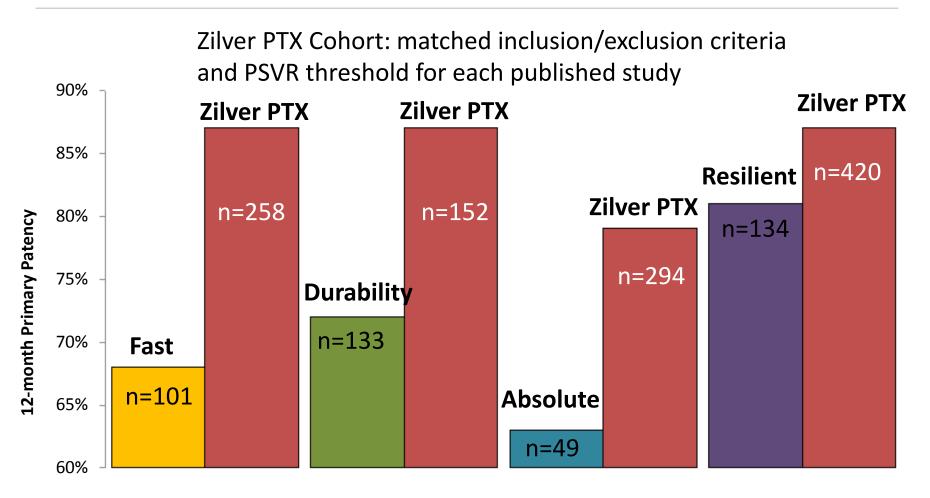
|                       | Zilver PTX<br>RCT | JPMS<br>RCT-like | JPMS<br>more complex | p-value* |
|-----------------------|-------------------|------------------|----------------------|----------|
| Lesions               | 247               | 378              | 703                  |          |
| Lesion length (cm)    | $6.6 \pm 3.9$     | $7.4 \pm 5.0$    | 18.6 ± 9.3           | < 0.001  |
| Diameter stenosis (%) | 80 ± 17           | 89 ± 12          | 93 ± 9               | < 0.001  |
| Total occlusions      | 33%               | 28%              | 49%                  | < 0.001  |
| In-stent restenosis   | 0%                | 0%               | 29%                  | < 0.001  |



- Consistency between RCT & JPMS RCT-like lesions
- Primary patency lower in more complex lesions as expected

|                               | RCT  | SAS  | Japan PMS |
|-------------------------------|------|------|-----------|
| Fracture Rate                 | 0.9% | 1.5% | 1.6%      |
| Number of<br>Stents Evaluated | 470  | 1889 | 1066      |

## **Zilver PTX Patency Compared to BMS**



Zilver PTX has higher 12-month patency rates relative to BMS published literature



# Meta-Analysis of Drug-Eluting Balloon Angioplasty and Drug-Eluting Stent Placement for Infrainguinal Peripheral Arterial Disease

#### **ABSTRACT**

**Purpose:** To perform a meta-analysis of randomized controlled trials (RCTs) of drug-eluting balloon (DEB) angioplasty and drug-eluting stents (DESs) for infrainguinal peripheral arterial disease.

Materials and Methods: Systematic searches were performed for all relevant RCTs.

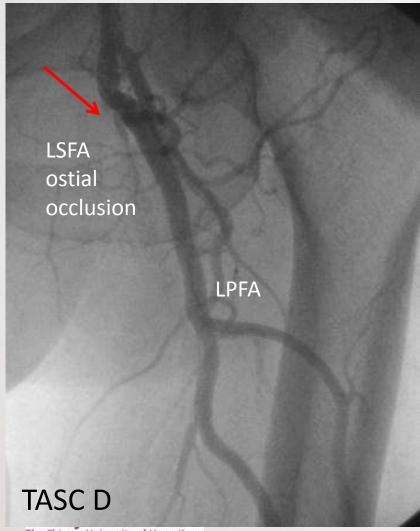
Results: Eight RCTs for DEB angioplasty and 12 RCTs for a DES in peripheral arterial disease were identified. Meta-analysis demonstrated statistically significant superiority of DEB over plain balloon angioplasty of femoral-popliteal disease for late lumen loss, restenosis, and target lesion revascularization, with no benefit in major amputation or mortality. Statistically significant superiority of DEB over percutaneous transluminal angioplasty (PTA) was demonstrated for infrapopliteal disease for restenosis and target lesion revascularization. Drug-eluting stents showed statistically significant superiority over bare metal stents (BMSs) of femoral-popliteal disease for late lumen loss and restenosis, with no benefit in mortality or amputation. Drug-eluting stents showed statistically significant superiority over BMSs of infrapopliteal disease restenosis and target lesion revascularization, with no benefit in amputation or mortality.

**Conclusions**: Drug-eluting balloon angioplasty and DESs demonstrated superior outcomes compared to PTA and BMS, with no difference in amputation or mortality.

## One of My Early PTX Case:

78F, DM, claudication (RC 3), ABI 0.65

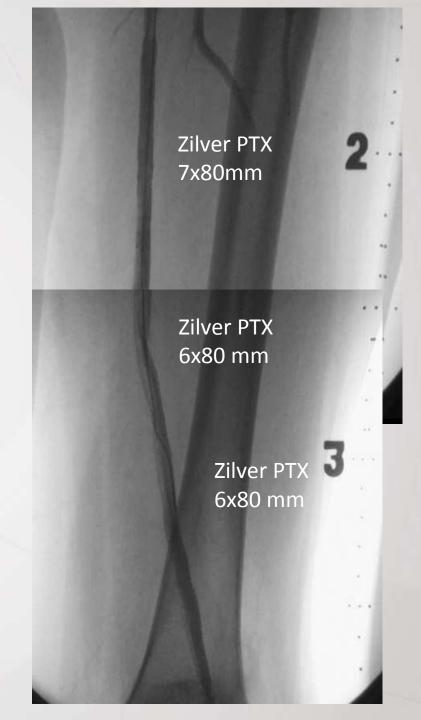








7F Zilver PTX system



香港中文大學醫學院 Faculty of Medicine The Chinese University of Hong Kong

## 12 months re-angio: No fracture RC 1, ABI 1.01



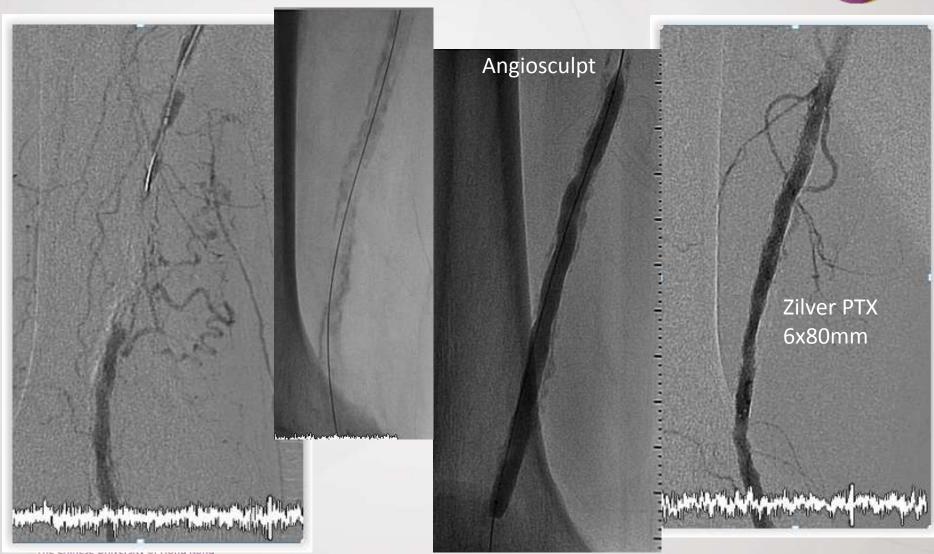
4 year clinical follow-up: RC 1, ABI 0.91

香港中文大學醫學院
Faculty of Medicine
The Charlese University of Hong Kong



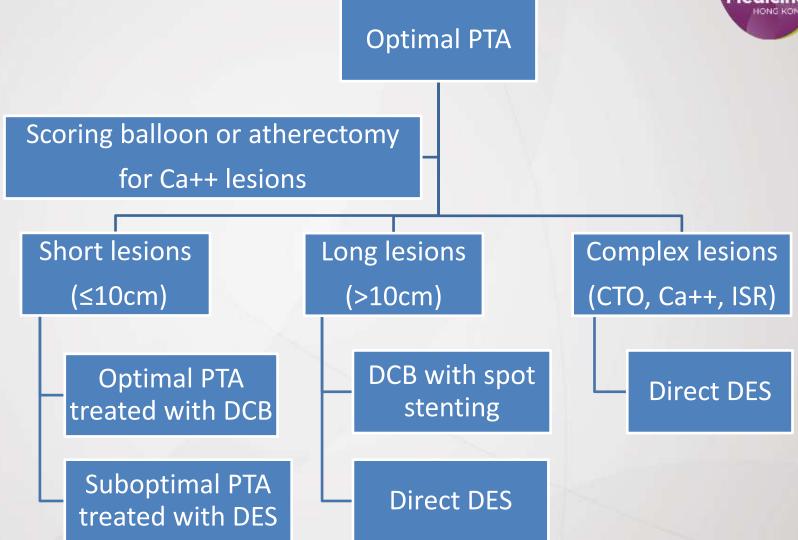
### **Calcified Chronic Total Occlusion**





## My Drug-eluting Strategy for SFA





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## Who is Paying for the DES?



- DES/DCB not reimbursed in HK
- 30-50% incremental cost for PTX vs. BMS
  - Reasonable
  - Much lower premium than coronary DES vs. BMS
- Patient willingness-to-pay for peripheral intervention is lower than coronary
- Is PTX a cost effective strategy?







## Why Drug-Eluting Stents Are Cost Effective in the Superficial Femoral Artery

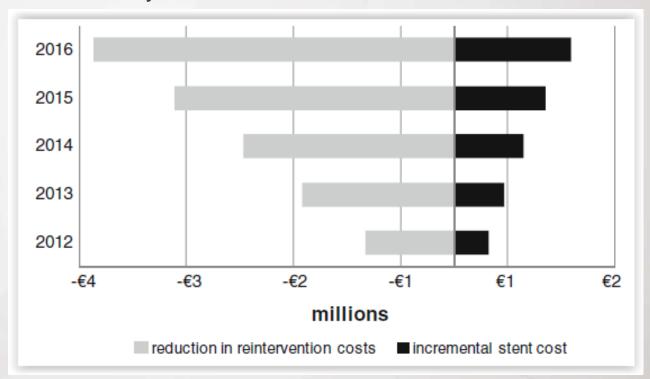
The importance of cost effectiveness in health care is accelerating. Implanting drug-eluting stents in the superficial femoral artery may offer a safe, effective, and economically valuable solution.

BY MARK W. BURKET, MD

"For a relatively modest increase in purchase price, extremely expensive follow-up care may potentially be avoided."

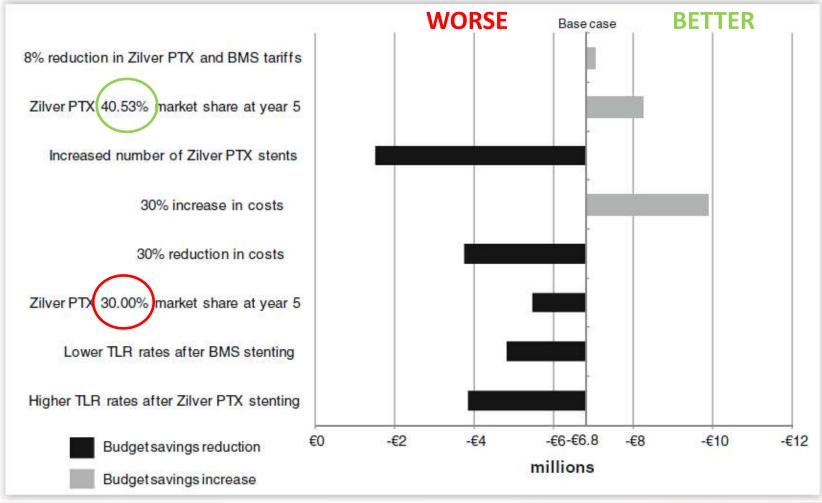
#### A Budget Impact Model for Paclitaxel-eluting Stent in Femoropopliteal Disease in France

- Systematic adoption of Zilver PTX results in cumulative 5-year cost saving
- Increased stent costs offset by reduced re-intervention costs



## **Sensitivity Analysis**





## Zilver PTX & My SFA Intervention Wish List



- ☑ New cogwheel delivery easy to perform
- ☑ High procedural success with stents
- ☑ Safe: low fracture rate
- ☑ Sustained efficacy up to 5 years
  - ☑ Complex 'real world' type C/D lesions
  - ☑ Superior patency vs. BMS
  - ☑ Sustained clinical benefit
- ☑ Preserve future treatment options
  - ☑ Focal ISR may be easier to treat
- ☑ Potential long term cost saving with increased use of DES



### **Thank You**















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The Chinese University of Hong Kong

