



Andrew A. Monte, MD, PhD & Donna Messersmith, PhD

ISCC- Pharmacogenomics

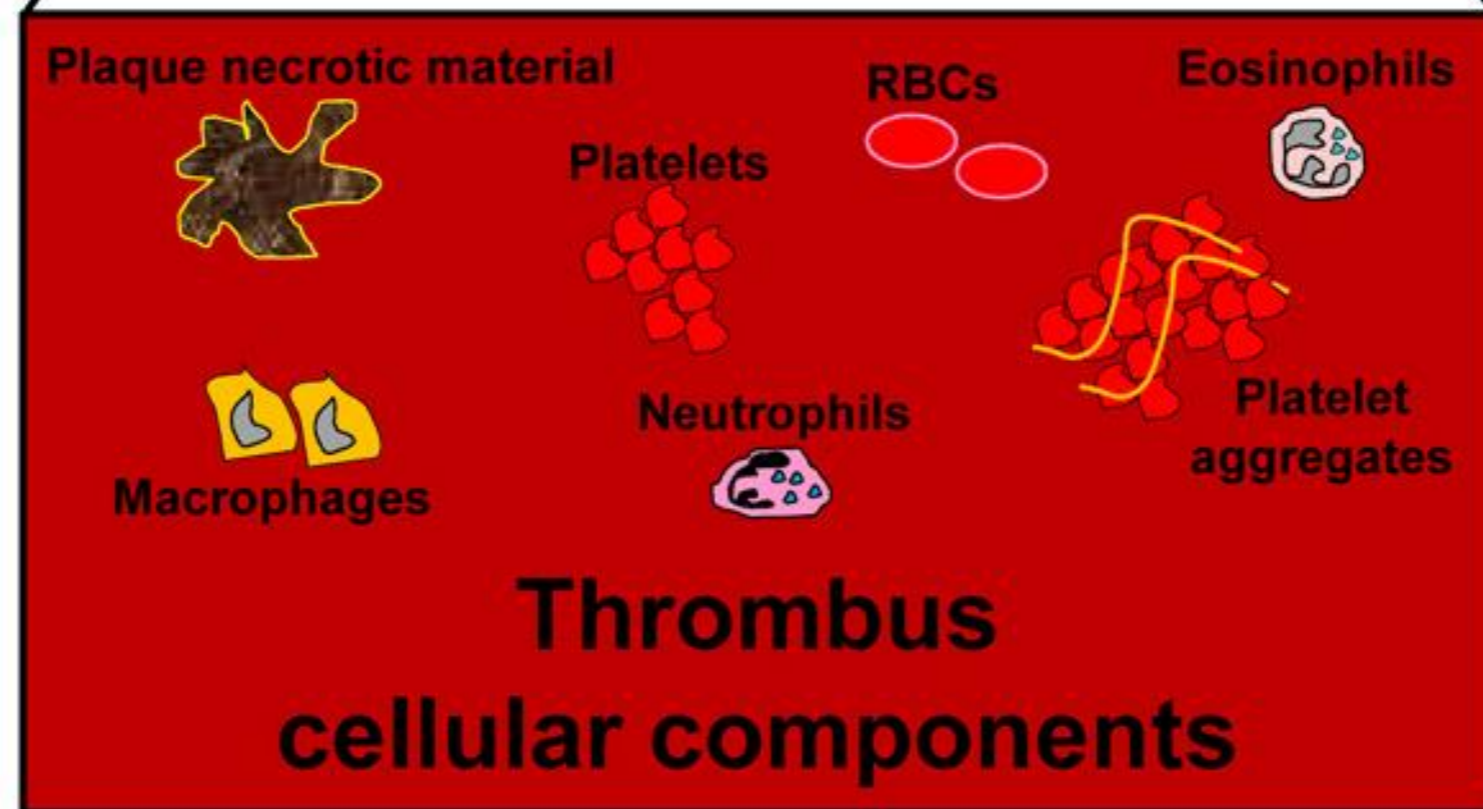
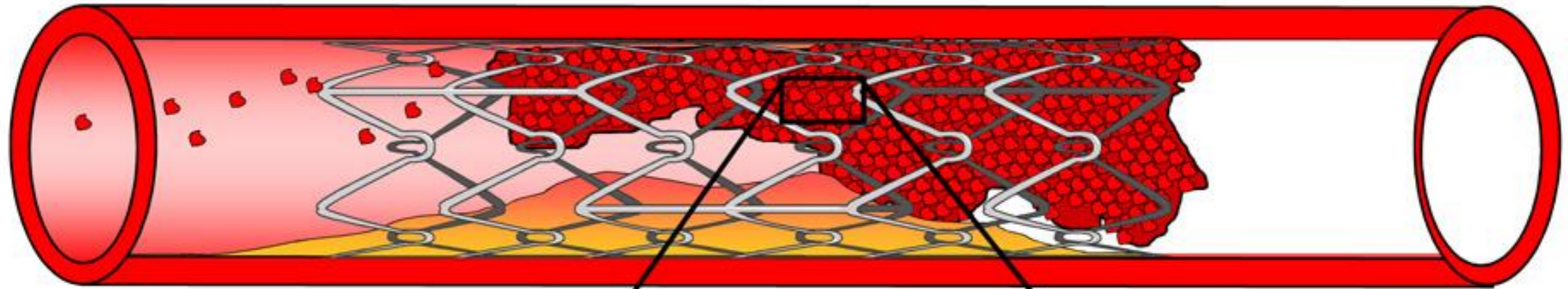
A Path
Forward

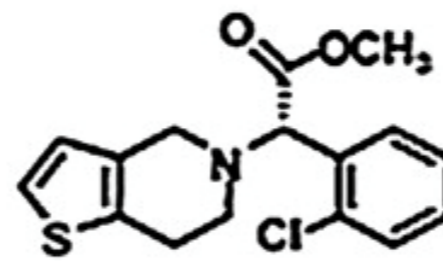
Agenda

- 1) Refinement of educational pillars (who, what, where)
- 2) Orientation-suggestions for resources



Stent thrombosis



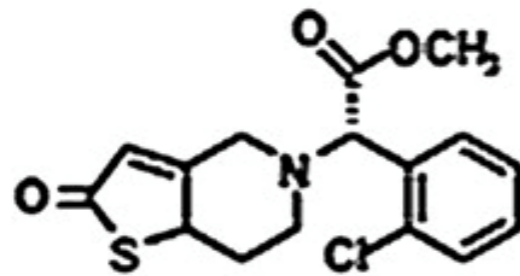


Clopidogrel

CYP2C19



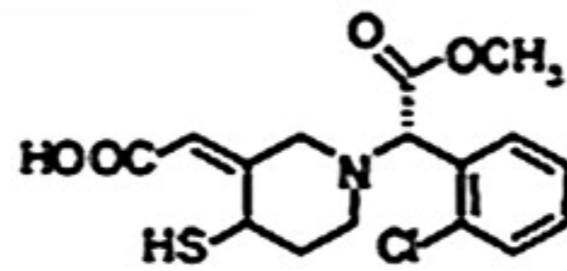
2-Oxo-
clopidogrel



CYP2C19



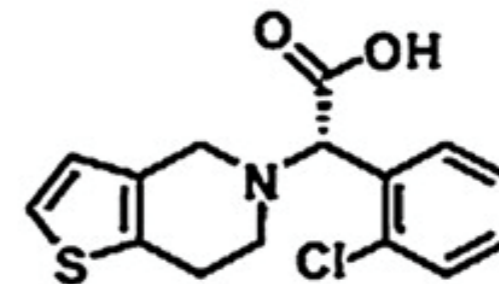
R-130964
(active)



Esterases











SR26334
(inactive)



Dosing Recommendations for Clopidogrel based upon CYP2C19 Phenotype

Phenotype	Implications for Clopidogrel	Therapeutic Recommendations	CPIC Recommendation Classification
Ultrarapid (UM), rapid (RM) and Normal (NM)	Normal platelet inhibition, decreased residual platelet aggregations	Normal Dosing	Strong
Intermediate Metabolizer	Reduced platelet inhibition; increased residual platelet aggregation; increased risk for adverse cardiovascular events	Prasugrel or other alternative	Moderate
Poor Metabolizer	Significantly reduced platelet inhibition;	Prasugrel or other alternative	Strong

Prices for Popular Antiplatelet Drugs

Popularity ▾	Brand Name (Generic Name) ▾	GoodRx Fair Price ▾	Price Trend	
	Plavix (clopidogrel)	\$11 ?		See Prices
<p>Clopidogrel (Plavix) is an inexpensive drug used to prevent heart attack, stroke, or other events in people who are at high risk. This drug is more popular than comparable drugs. It is available in brand and generic form. Generic Clopidogrel is covered by most Medicare and insurance plans, but manufacturer and pharmacy coupons can help offset the cost.</p>				
	Brilinta	\$348 ?		See Prices
<p>Ticagrelor (Brilinta) is an expensive drug used to prevent heart attack, stroke, or other vascular events in people who have had a recent heart attack or who have severe chest pain. This drug is slightly more popular than comparable drugs. There are currently no generic alternatives to Brilinta. It is covered by most Medicare and insurance plans, but some pharmacy coupons or cash prices may be lower.</p>				
	prasugrel	\$186 ?		See Prices
<p>PRASUGREL helps to prevent blood clots. This medicine is used to prevent heart attack, stroke, or other vascular events in people who are at high risk.</p>				
	Effient	\$476 ?		See Prices
<p>Prasugrel (Effient) is an expensive drug used to prevent heart attack, stroke, or other vascular events in people who are at high risk. This drug is slightly less popular than comparable drugs. A generic form of Effient may become available in 2017. It is covered by most Medicare and insurance plans, but some manufacturer and pharmacy coupons can still help offset the cost.</p>				



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2019 SURVEY OPEN

RE:DEFINE | RE:IMAGINE | RE:THINK

AAFP
LEADERSHIP CONFERENCE

PHYSICIAN PAYMENT REFORM

2018 PERFORMANCE PERIOD

J F M A M J J A S O N D

2019

J F M A

Data Submission Deadline
April 2, 2019

AAFP News

Learn About Breastfeeding Protections in Clinical Settings

[02/06/2019] – The AAFP and others will host a free webinar Feb. 11 from noon to 1:30 p.m. ET on the legal protecti...

New Research Shows Family Medicine Scope Is Shrinking

[02/06/2019] – Findings published in *Annals of Family Medicine* show that family medicine's scope of practice...

# (N=352)	GENE (UNIQUE = 127)	DRUG (UNIQUE = 223)	GUIDELINE	CPIC LEVEL	PHARMGKB LEVEL OF EVIDENCE	PGX ON FDA LABEL	CPIC PUBLICATIONS (PMID)
1	HLA-B	abacavir	Guideline	A	1A	Testing required	<ul style="list-style-type: none"> • 22378157 • 24561393
2	HLA-B	allopurinol	Guideline	A	1A		<ul style="list-style-type: none"> • 23232549 • 26094938
3	CYP2C19	amitriptyline	Guideline	A	1A		<ul style="list-style-type: none"> • 23486447 • 27997040
4	CYP2D6	amitriptyline	Guideline	A	1A	Actionable PGx	<ul style="list-style-type: none"> • 23486447 • 27997040
5	UGT1A1	atazanavir	Guideline	A	1A		<ul style="list-style-type: none"> • 26417955
6	TPMT	azathioprine	Guideline	A	1A	Testing recommended	<ul style="list-style-type: none"> • 21270794 • 23422873
7	DPYD	capecitabine	Guideline	A	1A	Actionable PGx	<ul style="list-style-type: none"> • 23988873

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Annotated
Drugs

 651

Curated
Pathways

 135

Clinical Guideline
Annotations

 102

Drug Label
Annotations

 509



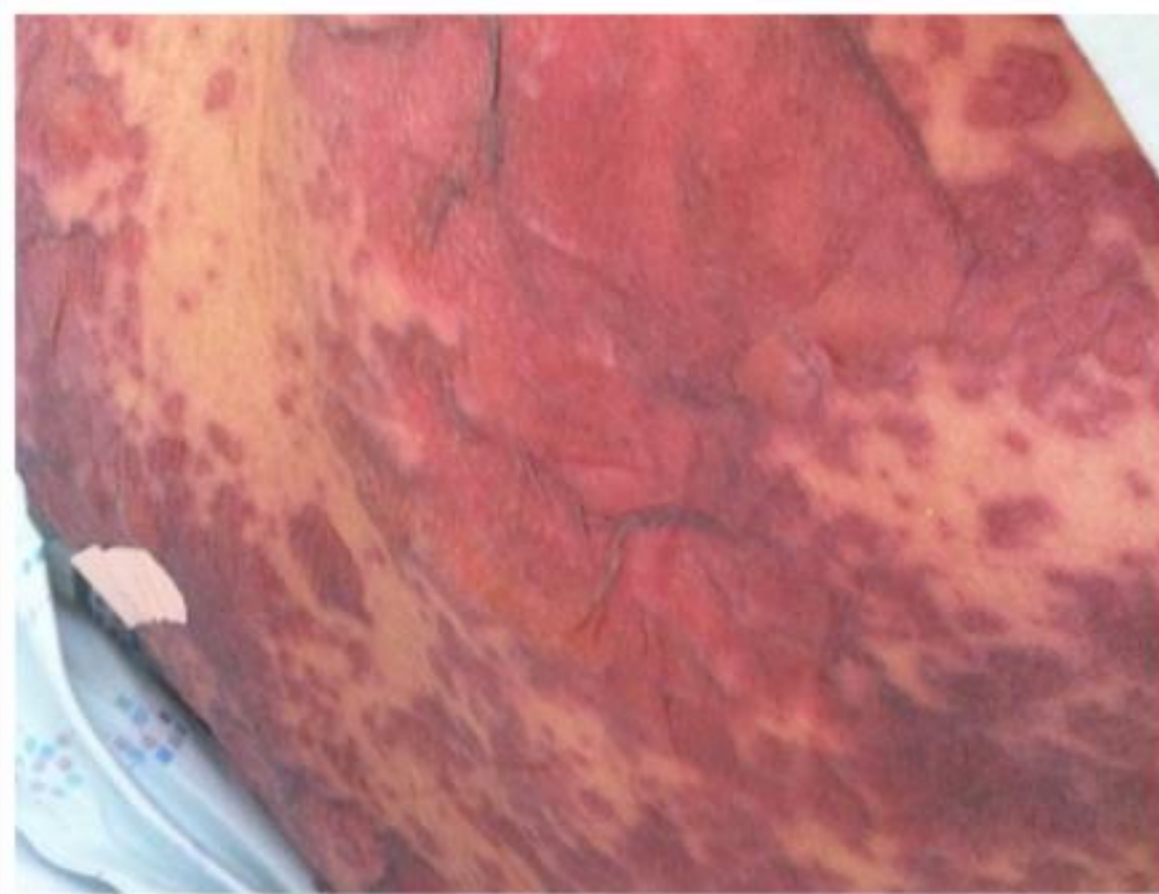
WHAT IS



PHARMACOGENOMICS







Society Outreach

- ❖ What has been done?
 - ❖ Phenomenal list by Cindy Paulazzo
 - ❖ AAFP discussion
- ❖ What is the next step?
 - ❖ Suggest guideline endorsement, CME hosting, commentaries in journals, didactics at meetings, etc.

Journal Commentaries

- ❖ What has been done?
 - ❖ TPMT/NUDT15 commentary in review
 - ❖ Arranging authorship for RYR1/CACNA1S

CME

- ❖ What has been done?
 - ❖ Question development
 - ❖ PharmGKB exercises
- ❖ What is the next step?
 - ❖ Finalize questions
 - ❖ Work with AAPF to get these up

Social Media

- ❖ What has been done?
 - ❖ Rachel Huddart manages CPIC, PharmGKB, PharmVar content
- ❖ What is the next step?
 - ❖ Continued content development
 - ❖ Metrics
 - ❖ Tagging of provider societies to increase view

Goals

- ❖ Complete one task while here
- ❖ Develop one 6 month and one 12 month goal