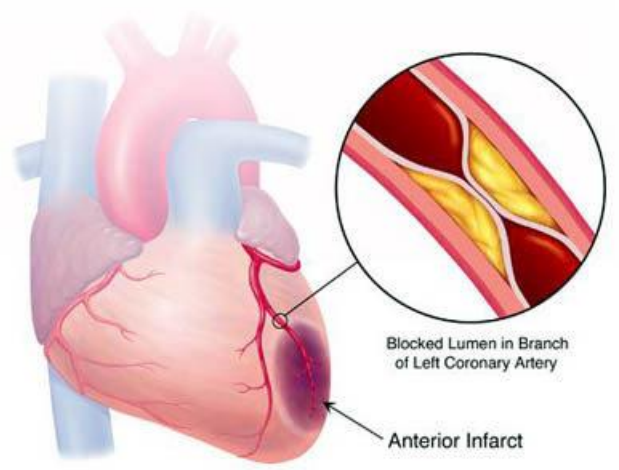

GENDER DIFFERENCE IN HIGH END PLATELET INHIBITION FOR OUTCOMES OF PCI PATIENTS

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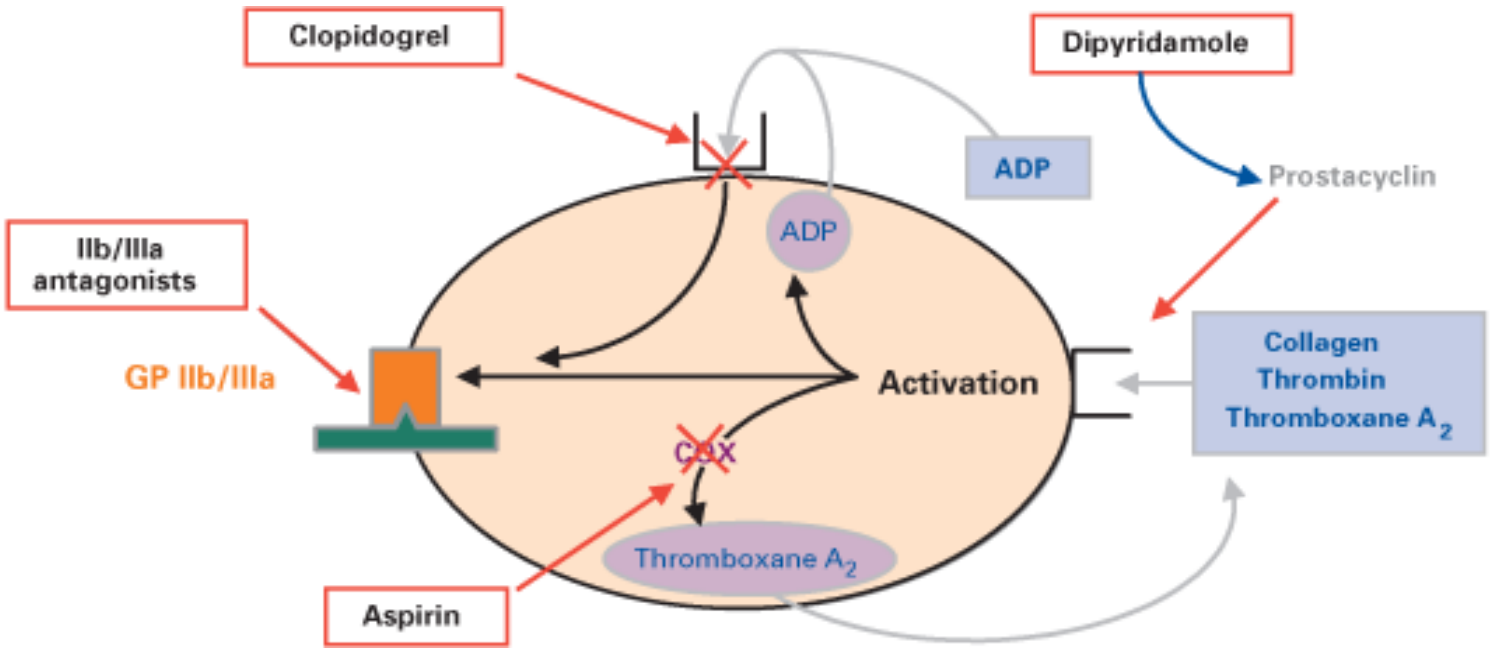
BACKGROUND

- Platelet inhibition is necessary in post PCI period as it is one of the risk factor for stent thrombosis and there are only few studies on platelet aggregation and inhibition for gender comparison between males and females.

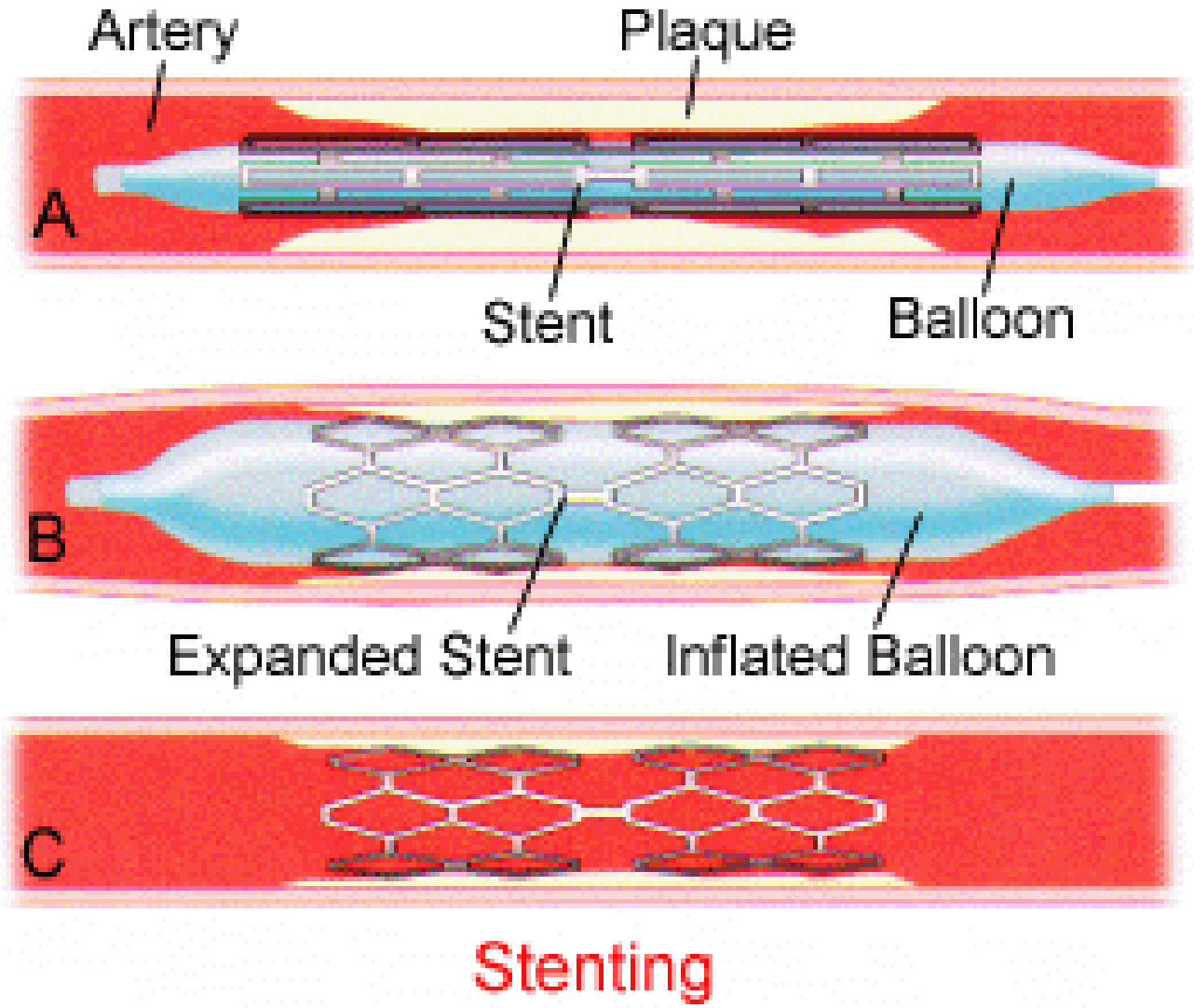
Mechanism of action



Coronary angioplasty, stents

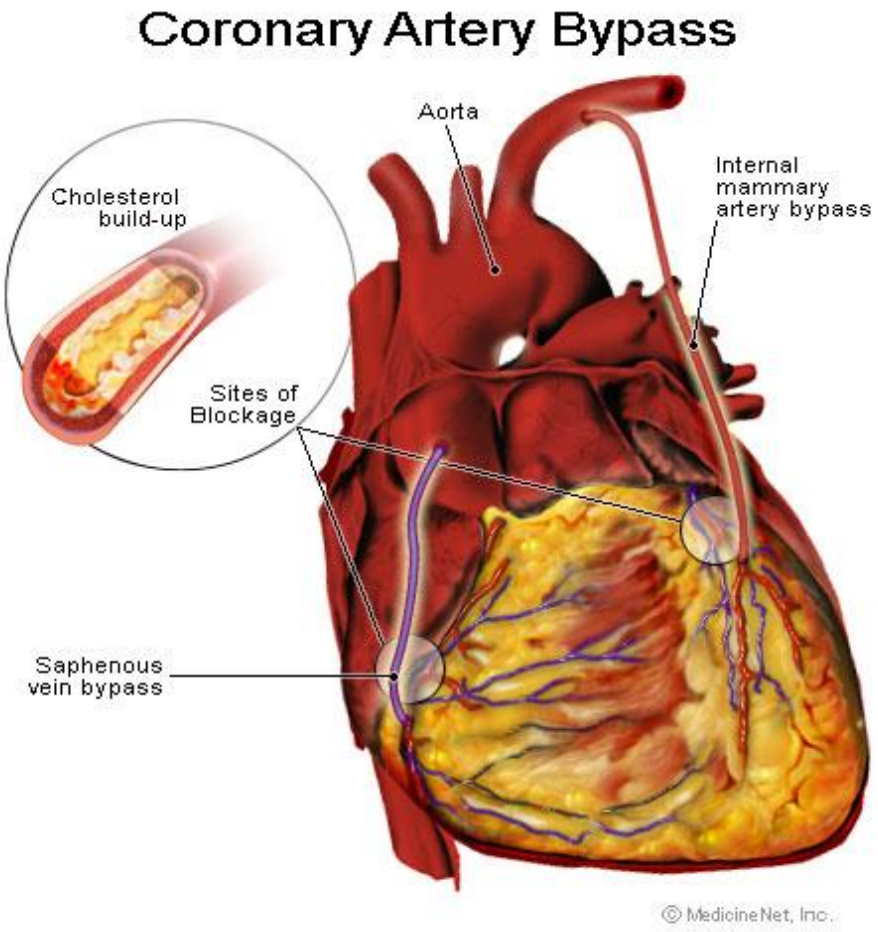
- DAPT +/- GP2B/3A
- Lowers restenosis, stent thrombosis

STENTS



Stenting

Coronary bypass implants



Coronary artery bypass

- To maintain patency of recanalised coronary artery & Implanted bypass vessel & Reduce MI

- DAPT is main stay of treatment?
- How to decide on DAPT?
- TAPT ?

Why DUAL Antiplatelet Therapy?

WHY ANTI-PLATELET

- Stent thrombosis is an uncommon but serious complication of coronary artery stenting that often presents as death and is almost always accompanied by myocardial infarction, usually with ST-segment elevation.

WHAT ANTIPLATELET

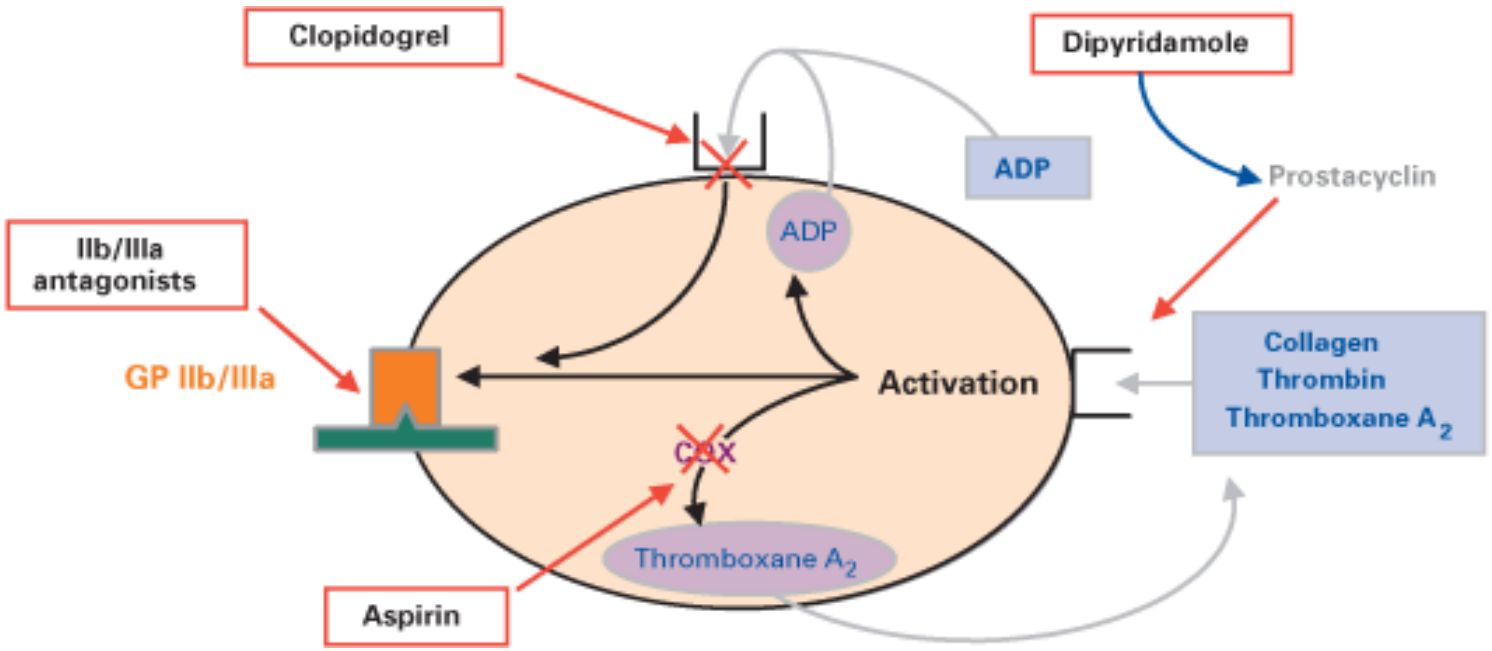
- DAPT(DAPT; aspirin plus platelet P2Y receptor blocker) significantly lowers the risk of stent thrombosis

STENT THROMBOSIS

DES induced thrombogenicity can be due to;

- Inhibition of endothelial cell proliferation leading to deferred local healing
- Tissue factor induction by the eluted drug
- Hypersensitive local reaction to the polymer coating
- Non-adherence

Mechanism of action



- DAPT is main stay of treatment ?
- How to decide on DAPT ?
- TAPT ?

CLINICAL STATUS

- ACS
- CARDIOGENIC SHOCK
- SEVERE LV DYSFUNCION
- STEMI – STENT THOMBOSIS
- PREVIOUS DES PCI

PROCEDURES CHARACTERISTICS

- **Complex PCI** –

1. Bifurcation Stenting,
2. Left Main Stenting,
3. Long Lesions Stenting,
4. Graft Lesion Stenting,
5. Prox LAD Stenting

- **Imperfect PCI** –

1. Stent Malapposition,
2. Stent Under Expansion
3. Residual Stenosis

Inter patient variability of clopidogrel

- **CYP2C19 polymorphism** –more common in asians-12-24%
- 85% of the drug is **inactivated**
- More interactions with other drugs eg; **PPI and statins**
- **COGENT trial-clopidogrel vs omeprazole-no significant interaction**

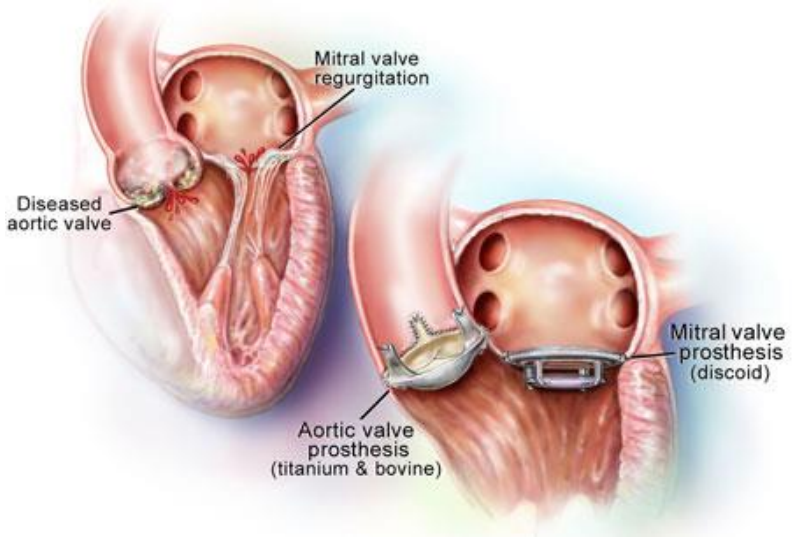
INDIAN SCEINERAO

- Clopidogrel resistance high prevalance
- Small vessel size

Prosthetic heart valves

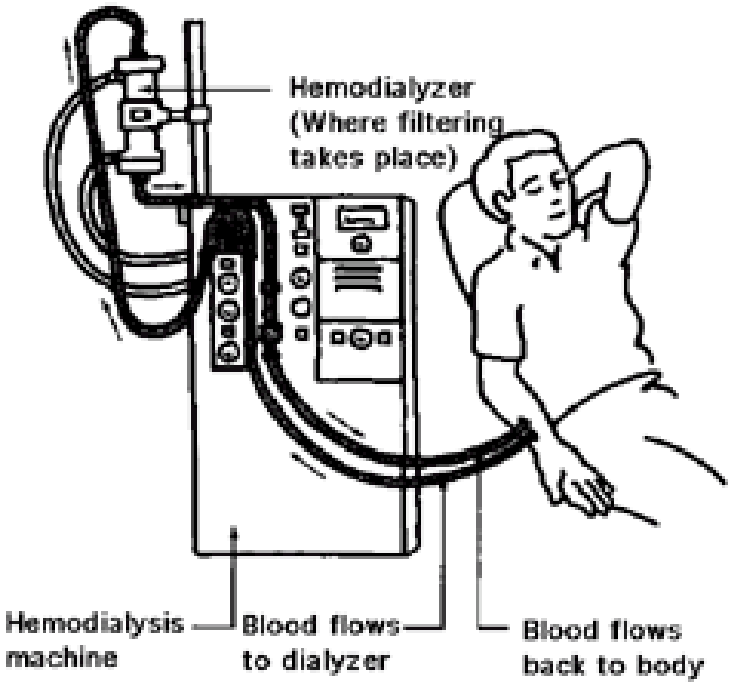
aspirin + warfarin –

reduce microthrombi, embolism



Arteriovenous shunts

- To maintain the patency of chronic arteriovenous shunts
- For haemodialysis, vascular graft



Cerebrovascular disease

- Reduce the incidence of TIA
- Stroke due to thrombosis
- Given in AF

MEATHODS

- We have studied 142 in patients from our unit of cardiology from august 2014 to 2016 who underwent PTCA and tested for platelet inhibition on 15th day of PCI. We did follow up at one year to see outcome (MACCE).

- In the present study all patients were on dual antiplatelet therapy with adequate clopidogrel treatment (defined as a maintenance dose of 75 mg bd daily for >5 days, a loading dose of 600 mg at least 24 h before elective PCI or 600 mg at least 4 h prior to emergency PCI) and low-dose aspirin of 80–100 mg daily for at least 1 year.

- The study was conducted according to the principles of the Declaration of NIMS . All patients gave written informed consent.

Clinical endpoint

- The clinical endpoint was a combination of

1. All-cause Death,
2. Non-fatal Myocardial Infarction (Defined As The Occurrence Of Ischaemic Symptoms As Well As A Spontaneous Troponin T Value Or Creatine Kinase MB Greater Than The Upper Limit Of Normal),
3. Definite Stent Thrombosis (According To The ACC AHA Criteria) And
4. Ischaemic Stroke.

Platelet function testing

- **Light transmittance aggregometry**

- Performed using an APACT 4004 aggregometer (LABiTec, Arensburg, Germany) at 37°C.

- Platelet poor plasma (PPP) was used as a reference for 100% aggregation and maximal platelet aggregation (%) was measured in non-adjusted platelet rich plasma after stimulation with arachidonic acid (AA) in a final concentration of 0.5 mg/ml to determine on-aspirin and clopidogril platelet reactivity and adenosine diphosphate (ADP) in a final concentration of 20 µmol/L to determine on-ANTIPLATELET DRUG platelet reactivity.

RESULTS

- Out of 142 patients 30 were females and 112 were males.
- Both the groups were matched in baseline characteristic of age , hypertension , type of presentation (stable or unstable) weight , eGFR, type of stent , presence or absence of LV dysfunction , single or multi vessel disease.

Parameter	Male	Female	p Value
Total No	112(78.9%)	30(21.1%)	-
Age	57.07± 9.55	56.196 ± 10.432	0.666
HTN	67 (59.8%)	22(73.3%)	0.15
DM	43(38.4%)	19(63.3%)	0.01
SM	45(39.3%)	1(3.33%)	0.000
PVD	2(1.8%)	0(0%)	0.15
CVA	2(1.8%)	0(0%)	0.15

- There was significant difference in smoking (p= 0.000) , diabetes (0.01) and hemoglobin levels (12.12 vs 13.60 g/dl , p = 0.04) CHAD VASC score between males and females but there is tendency for high end platelet inhibition in females (30% vs 21.4%, p=0.064).

Parameter	Male	Female	p Value
Hemoglobin	12.259 ± 1.405	13.534 ± 2.074	0.000
Chad Vas Score	2.700 ± 0.952	1.414± 1.311	0.000
ACS	60(53.6%)	16(53.3%)	0.98
LVD	49(43.8%)	8(26.7%)	0.067
GPI	9(8.04%)	4(13.3%)	0.43

- There are 9(30%) females with higher end platelet activity >50% in whom there are nil events in them and there are 24 (21.43%) males with higher end platelet activity >50% in whom there are 3 non cardiac events (AV fistula, CSA+CIN, CCF) in them but total event rate is higher in females(10%) than in males (8.04%).

- Which is not statistically significant (Chi square test person = 1.238, p=0.266, and fisher exact test p= 0.545, OR = 0.00, 95% CI 0.00 to 6.649, RR = 0.00, 95% CI 0.00 TO 5.389) .

CONCLUSION

- Though there is a tendency of higher end platelet activity in females, this is not translated into the clinical events at one year.
- No difference in events between males and females in MACCE
- No difference in events between overall high end platelet activity and event rates.

- THE STUDY HAS ESTABLISHED THAT PATIENTS EXHIBITING A HIGH ON-TREATMENT END PLATELET INHIBITION >50% STATUS HAS NO HIGHER TENDENCY FOR ADVERSE EVENTS POST-PCI WHICH IS IN CONTRAST TO PREVIOUS STUDIES

THANK YOU