

## Other New Parenteral Anticoagulants (Thrombin inhibitors)

1. **Lepirudin**: is a direct thrombin inhibitor and approved I.V. for treatment of patients with heparin-induced thrombocytopenia. There is no antidote for lepirudin.
2. **bivalirudin**: administered I.V. and is used as an alternative to heparin in patients undergoing coronary angioplasty or cardiopulmonary bypass surgery. The  $t_{1/2}$  of bivalirudin is 25 min.
3. **Argatroban**
4. **antithrombin** is a recombinant form of human antithrombin produced from the milk of genetically modified goats. It is approved as an anticoagulant for patients with hereditary antithrombin deficiency undergoing surgical procedures.

# New Parenteral Anticoagulants (Thrombin inhibitors)

antithrombin

hereditary antithrombin deficiency undergoing surgical procedures.

recombinant form of human antithrombin produced from the milk  
of genetically modified goats

أرقى فيلتيين ل ال ليبى +

Lepirudin

- \* Direct الليبي انسان مستقيم
- \* Iv الليبي مبرمجته في وريده
- \* heparin-induced thrombocytopenia
- \* no antidote  
ليبي (معاكس) لا  
لم يبت ليبي اسمها حبه



bivalirudin

- \* IVI (continuous)
- \* alternative to heparin in patients undergoing  
coronary angioplasty cardiopulmonary bypass surgery
- \*  $T_{1/2} = 25 \text{ min}$

25 دقايق  
حبه مبرمجته فيلتيين بعلمها فيلتيين  
ل قلب + رئة  
ل قلب (coronary)

أرقى فيلتيين ل ال ليبى +  
Argatroban



## New oral anticoagulants

### 1. Dabigatran: Direct thrombin inhibitors

- It is prodrug and approved for stroke prevention in patients with atrial fibrillation.
- *Direct thrombin inhibitor* with high affinity and specificity.
- Half-life: 12–14 hours
- It produces predictable anticoagulant response and so routine coagulation monitoring is unnecessary.
- It is more safe and more effective than warfarin.
- Dabigatran antidote is recently available (idarucizumab)

### 2. Betrixaban:

- \* Direct factor Xa inhibitor
- \* Safe and well tolerated.
- It is The only [anticoagulant] that is not cleared by the kidneys and so no dose adjustment in renal impairment.

# New oral anticoagulants

## 1. Dabigatran

نظار

Big ← بحال مشکله كبير  
Be tri: ← نڪون ٻنڌڻو نه ڪلا ڪرنا  
oral

## 2. Betrixaban

Direct → بشتل علي  $Xa$

Better → Safe and well tolerated.

D: Direct

D: Direct: thrombin inhibitor

A: atrial fibrillation (stroke prevention لازم نه ڪرڻ)

Big: high specificity → thrombin → more safe and more effective than warfarin.  
affinity

T: Twelve half life (12-14)h

R: Routine monitoring X

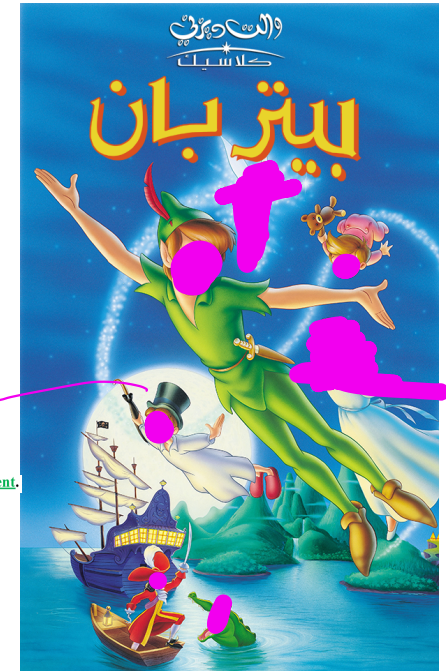
It produces predictable anticoagulant response

antidote is recently available (idarucizumab)  
mono clonal

Big: فریب داره مناسبات  
I dar you → انڊرڪوڊ  
القمار ٻيڻي علي خريجه

\* prodrug

activ به ڪا به ڪم



not cleared by the kidneys  
no dose adjustment in renal impairment.