

## 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 فيلتين ل ال لبيح +

## Lepirudin

- \* **Direct** الليبي انسان مستقيم
- \* **Iv** الليبي صبر و حنانه في وريه
- \* heparin-induced thrombocytopenia
- \* **no antidote**  
ليبييا (نا العكس) →  
لم بنت ليبييه اسمها حبه



## bivalirudin

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

25 غرما  
حبه سة 25 منكلتين بعلمها فيلتين  
له قلب + رنة  
له قلب (coronary)



## 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

تظار

Big بهل متکله کبير  
Be tri: نڪون بنجرب نڪسن کلامنا  
oral

## 2. Betrixaban

Direct ↓ بستفل على Xa

Better → Safe and well tolerated.

D: Direct

D: D → 2: thrombin inhibitor

A: atrial fibrillation (stroke prevention هم)

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

T: Twelve half life (12-14)h

R: Routine monitoring X  
ن

It produces predictable anticoagulant response

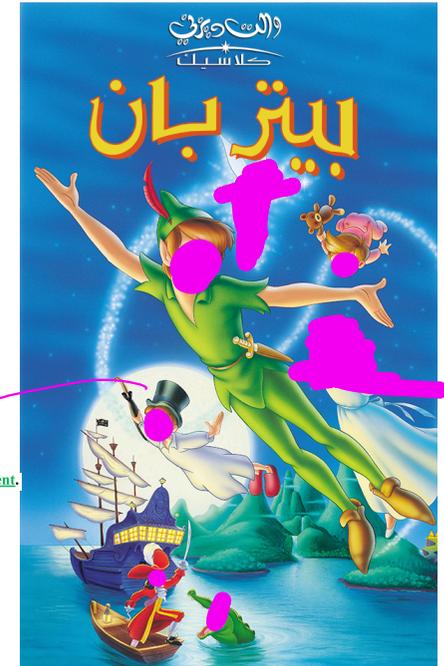
antidote is recently available (idarucizumab)

mono clonal

فرقة داره من لسانه ال Big.  
I dar you → انكوبره  
القطار بيش على خريجه

activ به ما يضل الجسم  
نصير

\* prodrug



not cleared by the kidneys

no dose adjustment in renal impairment.