Female fertility management in Beta thalassaemia

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Treating Haemoglobinopathies 2020
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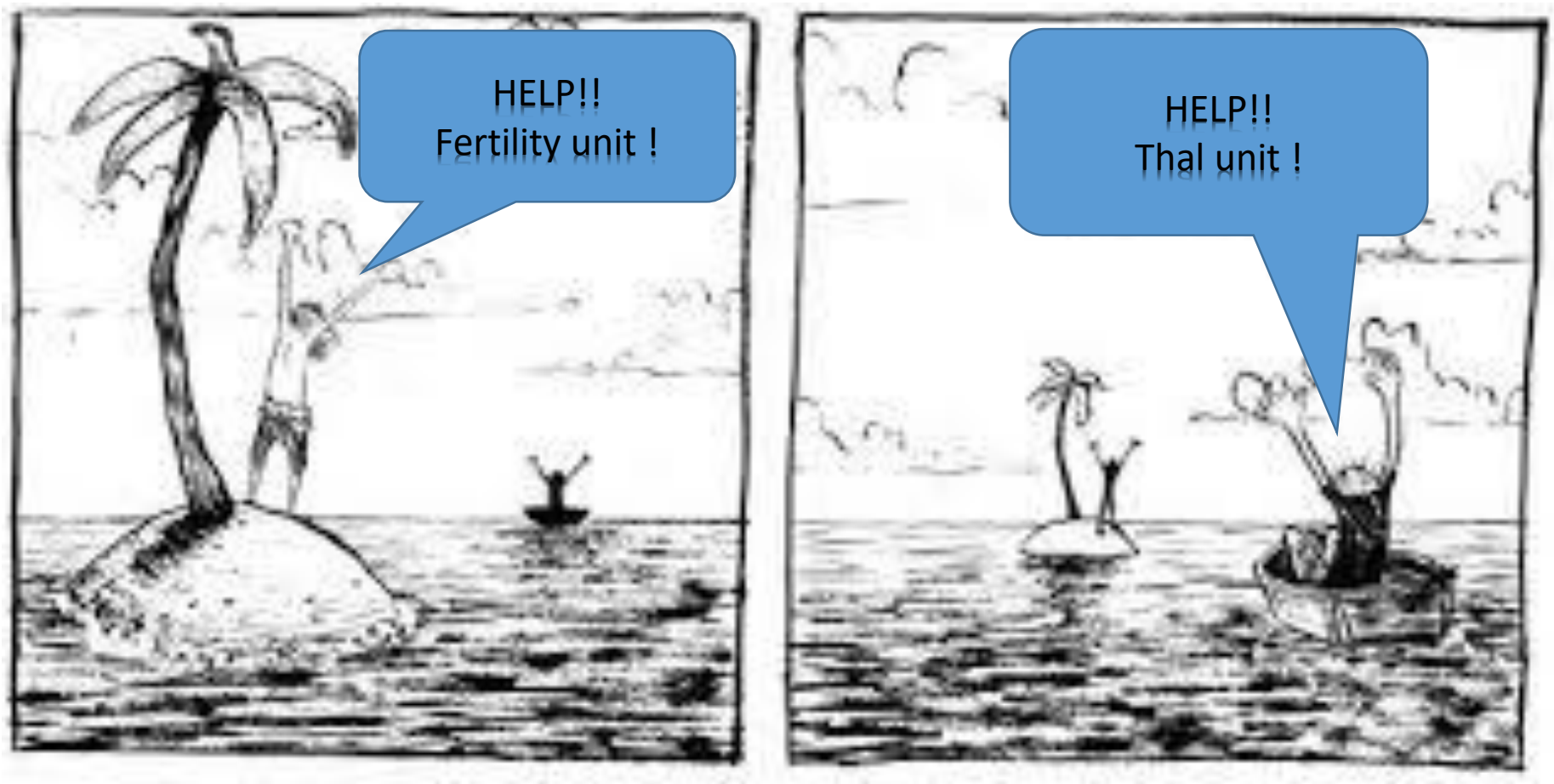
Talk overview

- General fertility background
- Pre-conception management
- Ovulation induction
- PGS
- Summary


HELP

Two isolated groups?



Aims and standard

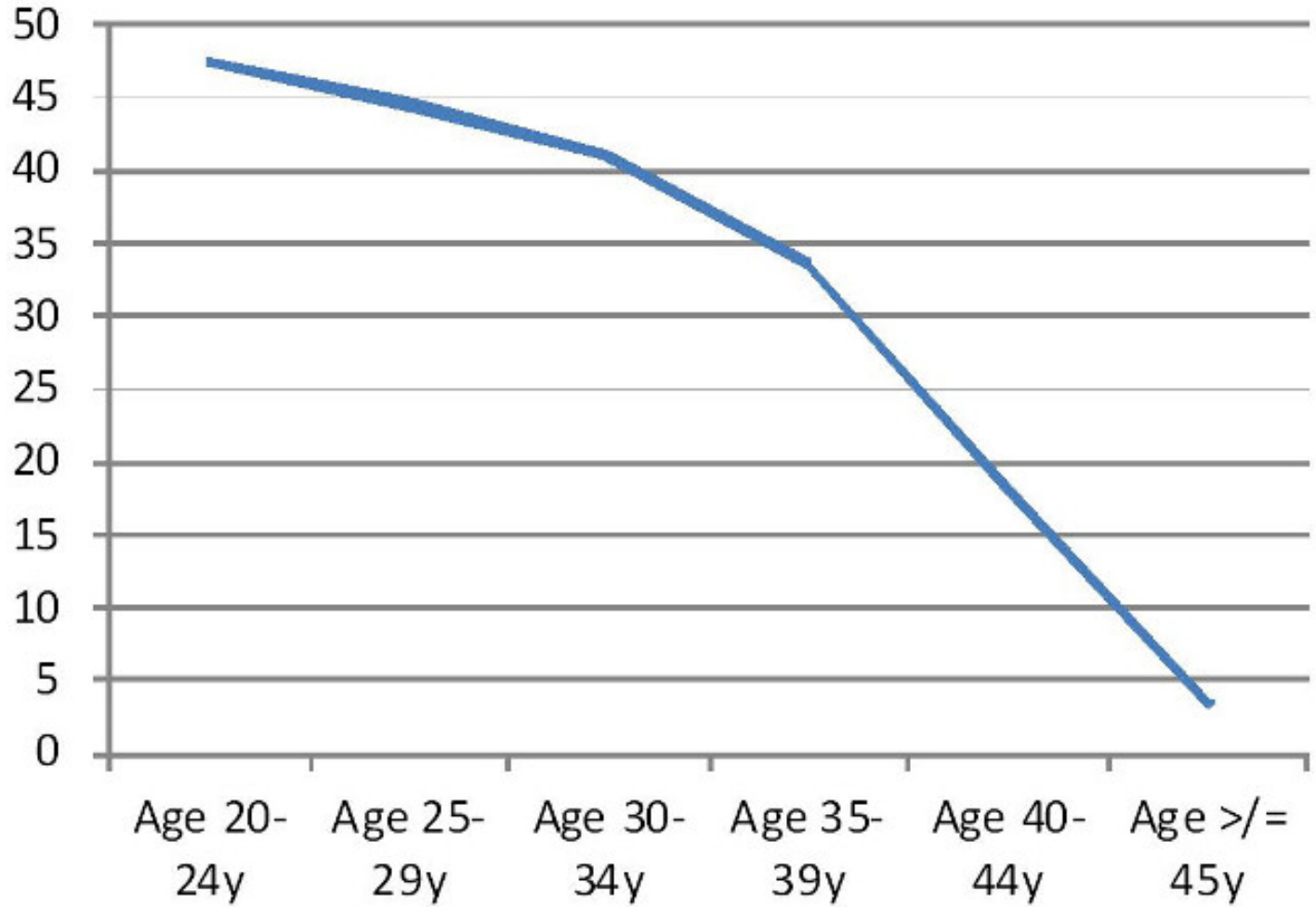
- To allow for discussion about fertility, and potential pregnancy, with appropriate advocacy
- Maximise chances of conception
- Experienced specialists at a time the patient wishes

What use is a fertility specialist

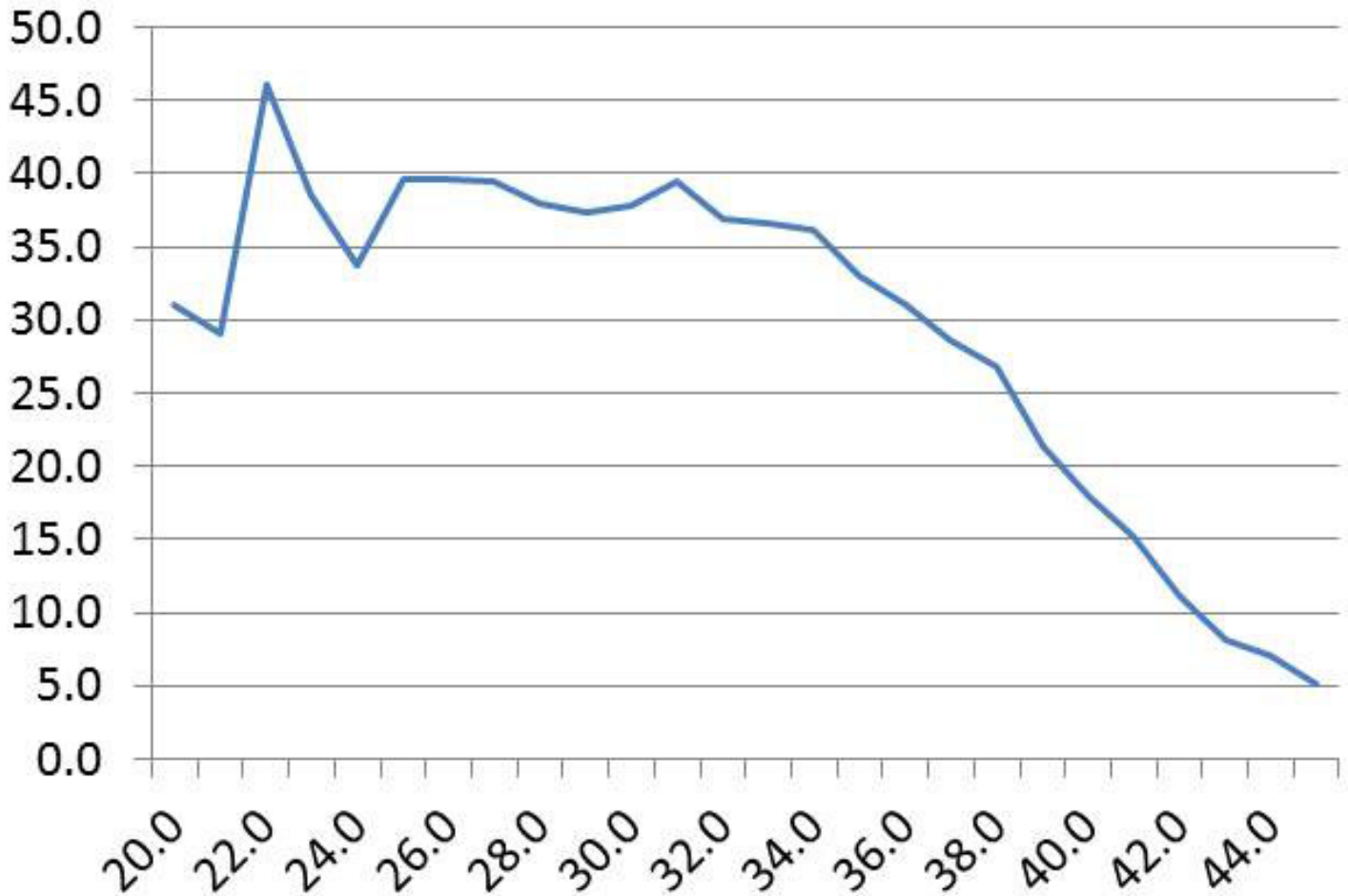
The pituitary and hypothalamus are very sensitive to iron damage, and hypogonadotrophic hypogonadism was a frequent complication which has fallen in incidence in recent years with better chelation therapy

NO direct effect on the ovary other than a delay in accessing fertility treatment

Annual fertility rate for 100 women not using contraception



Live births per 100 embryo transfers



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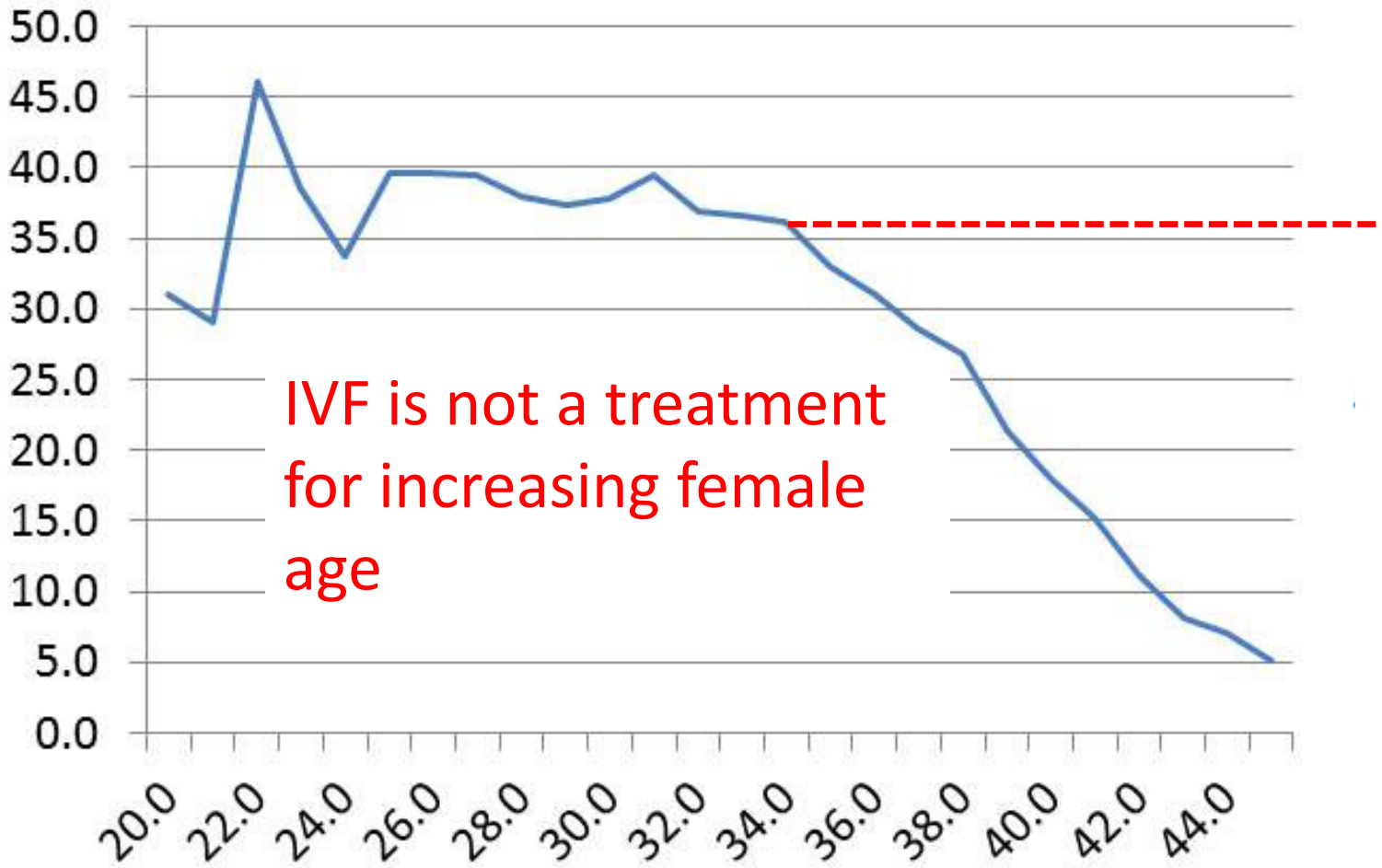


This is 90% of my (systemic) prescribing

	Sequential	Continuous
Oral	Femoston 1/10 or 2/10 DYDROGESTERONE	Femconti
Patch	Evorel Sequi	Evorel Conti
Transdermal * + Mirena	**Estrogel (up to 4 pumps per day)** **Estradiol Patch from 25ug to 100ug**	
Transdermal* + Oral Progesterone	Utrogestan 200mg first 14 days of calendar month	Utrogestan 100mg every day
Testosterone	Tostran 2 pumps per week	

*Gel or Patch

Pre-pregnancy management

Female thalassemia/ fertility communication sheet		
	Comment	Date
		01/01/2016
T2 Ejection Fraction		
Arrhythmia assessment		
Diabetic screen / Frucosamine level		
Last Bone density? On treatment		
Alloimuinsed?		
Rubella immune		
TSH level/ thyroxine dose		
Vitamin D level and dose		
Folic acid 5mg for three months prior		
Check meds (no bisphosphonates or ace inhibitors)		
Splenectomised Pneumococcus and Hep B vaccine		
Splenectomised on Pen V		
Stop chelation drugs for 12 weeks prior		
Desferoxamine ok up to ovulation or positive PT		
Partner haemoglobinopathy screen		

Management of Beta Thalassaemia in Pregnancy

Green-top Guideline No. 66
March 2014

https://goo.gl/HnM8iY

From Standards Pre pregnancy preparation

- Careful pre pregnancy planning
  - Pre pregnancy T2*
  - Ferriscan liver iron
  - Glucose tolerance test
  - Partner screening and counselling
- Optimisation of liver and cardiac iron
  - Target T2*>20 ms but Ok for <20ms if EF stable and agree to chelate during pregnancy
  - Liver iron <5mg/g/dw on ferriscan

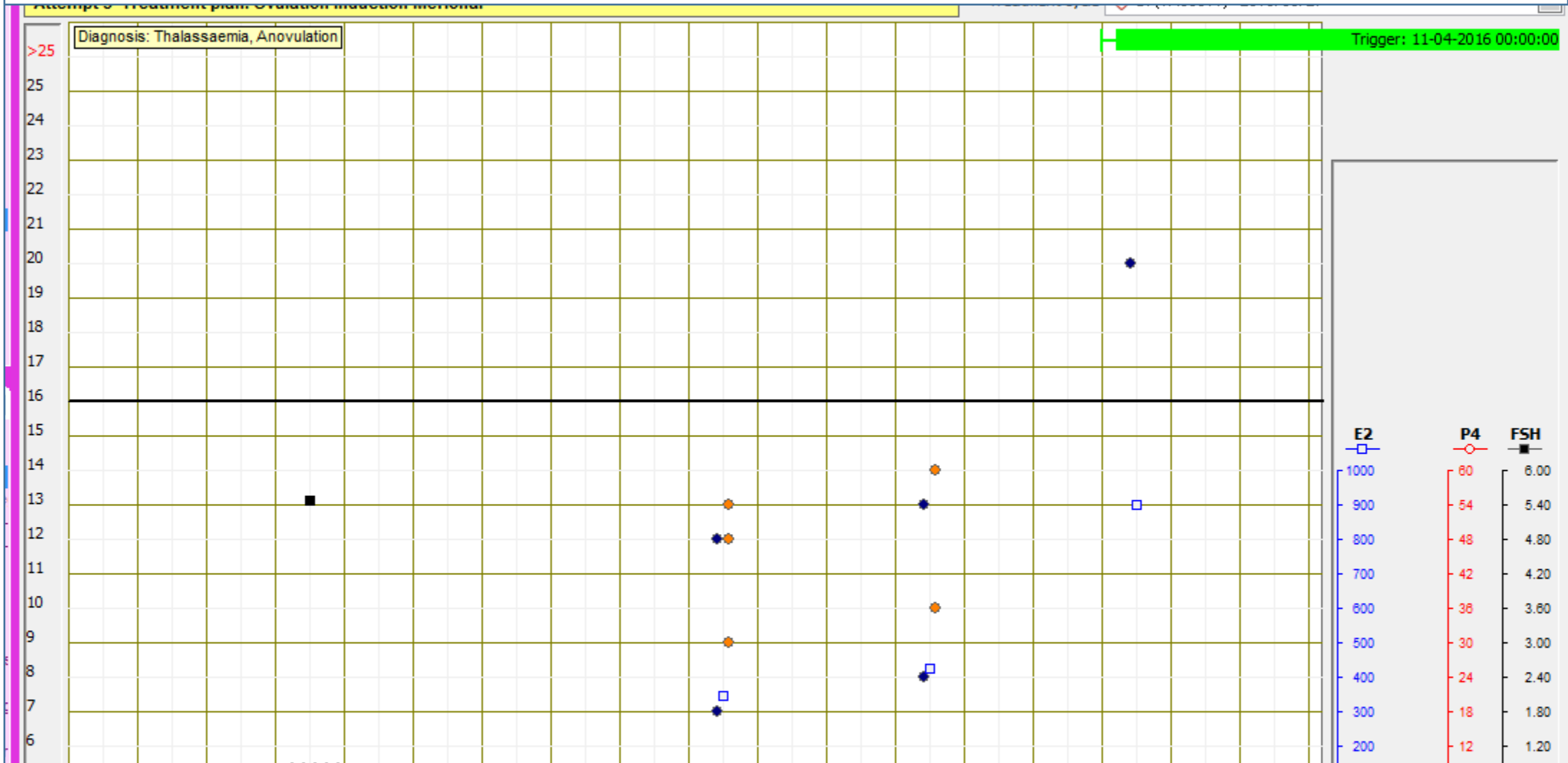
Pregnancy guideline
pre-pregnancy preparation

- Stop all oral chelators 3 months prior to conception and convert to DFO
- Stop all bisphosphonates
- Start folic acid 5mg daily at 3 months pre conception
- Vitamin D not optimal? then correct

Management of Conception

Fertility treatment at WFU

- Treated as “normal” fertility patients
- 3 nurses, 2 doctors and counselling
- Daily monitoring
- Injectable gonadotrophins
- Ovulation induction and intra-uterine insemination


Diagnosis: Thalassaemia, Anovulation
Trigger: 11-04-2016 00:00:00
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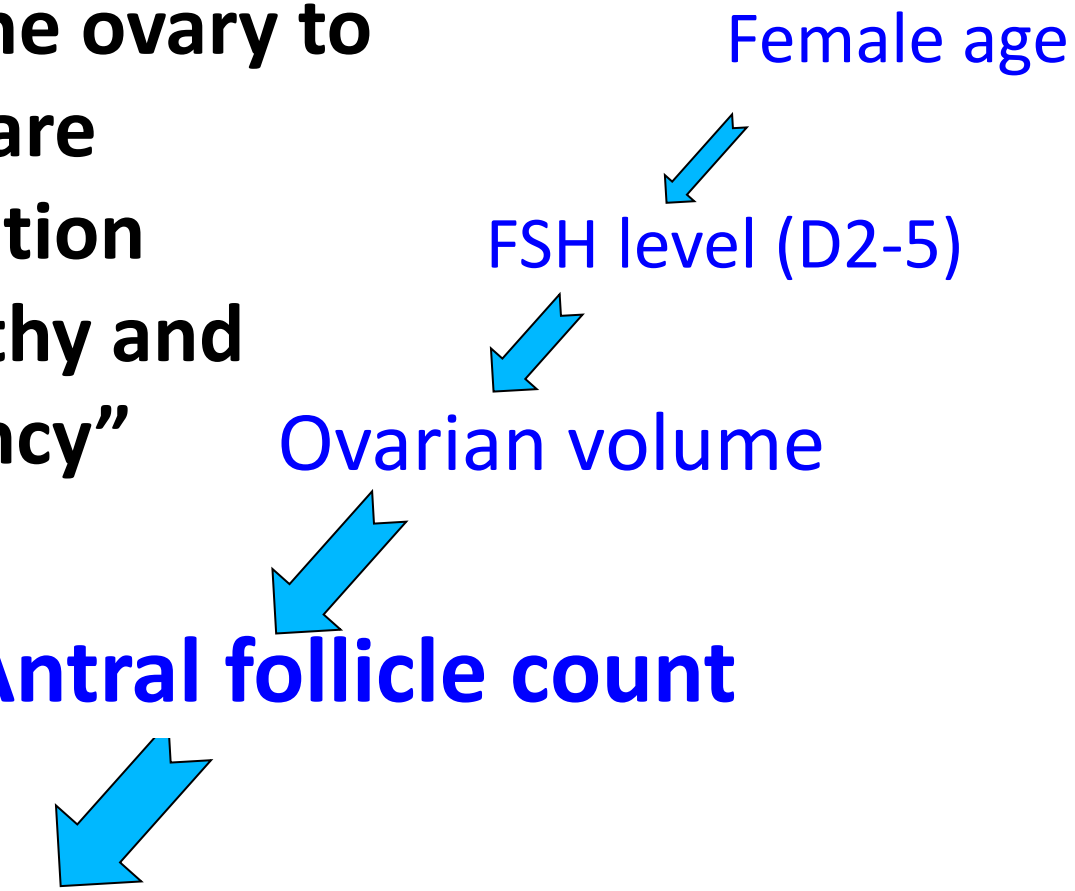
36
30
24
18
12
6.00
5.40
4.80
4.20
3.60
3.00
2.40
1.80
1.20

Pre fertility treatment investigations

- Semen analysis (and repeat if abnormal)
- FSH LH Estradiol TFT Prolactin Rubella
- Transvaginal ultrasound
- Chlamydia testing
- Test for tubal patency?
  - Hysterosalpingram (Xray)
  - Hycosy

Ovarian reserve

“The capacity of the ovary to provide eggs that are capable of fertilisation resulting in a healthy and successful pregnancy”



Ovulation induction

- Hypo-gonadotrophic
  - Low FSH and LH
- Purified human menopausal gonadotrophin
- Self administered
- Low volume injections
- Monitoring

Standard regime

- Low dose start 75 iu per day
- Scanning and estradiol measurements from Day 9 of stimulation
- Aiming for mono-follicular response
- Stop desferoxamine and vitamin C on the day of ovulation trigger

Age	Treatment cycles	Outcome
37		Unable to stimulate-small volume ovaries
38	2 cycles in 2011 with Menopur	Pregnant- Followed up till 36 weeks
32	egg donation both p thal mjr	
31	one	Pregnant- Followed up till 36 weeks
42	two	Pregnant- Followed up till 36 weeks
27		Only just starting treatment this month
35	2 cycles in 2015 with Merional	Did not concieve travel issues
38	5 cycles in 2012 with Merional	Pregnant- Viable pregnancy confirmed at 7 weeks
39		Spontaneous conception but miscarried (fibroids)
34	1 cycle in 2013 with Merional	Pregnant- Followed up till 37 weeks
29	5 cycles in 2014 with Merional	Conceived but had a miscarriage
37	No treatment at Whittington	waiting tostart
35	1 cycle in 2012 with Menopur	Pregnant- Followed up till 37 weeks
42	IVF with donor oocytes	Twin pregnancy (DC/DA)- Followed up toll 33 weeks
30	3 cycles with merional	Pregnant-Awaiting viability scan
43	2 cycles in 2007 with Menopur	Successful pregnancy
35	4 cycles - poor response	Not conceived still having ongoing treatment

Complications

- Anxiety
- Travel and access
- Lengthy time frame to respond
- No response (ovarian failure)
- Over response
  - Multiple pregnancy
  - Cycle cancellation

Pre-implantation genetic screening

- Preferable to pre-natal diagnosis (Amnio/ CVS) for many
- Theoretically an ideal treatment
- In practice a long and drawn out process
- Inherent risks of IVF treatment
- Public funding is limited
- Self funded treatment in expensive
- Pregnancy results are high in young women

Take home message

- Fertility treatment for female thal patients can be straightfoward
- Work with the fertility consultants locally

Most importantly

….REFER EARLY……!!!!

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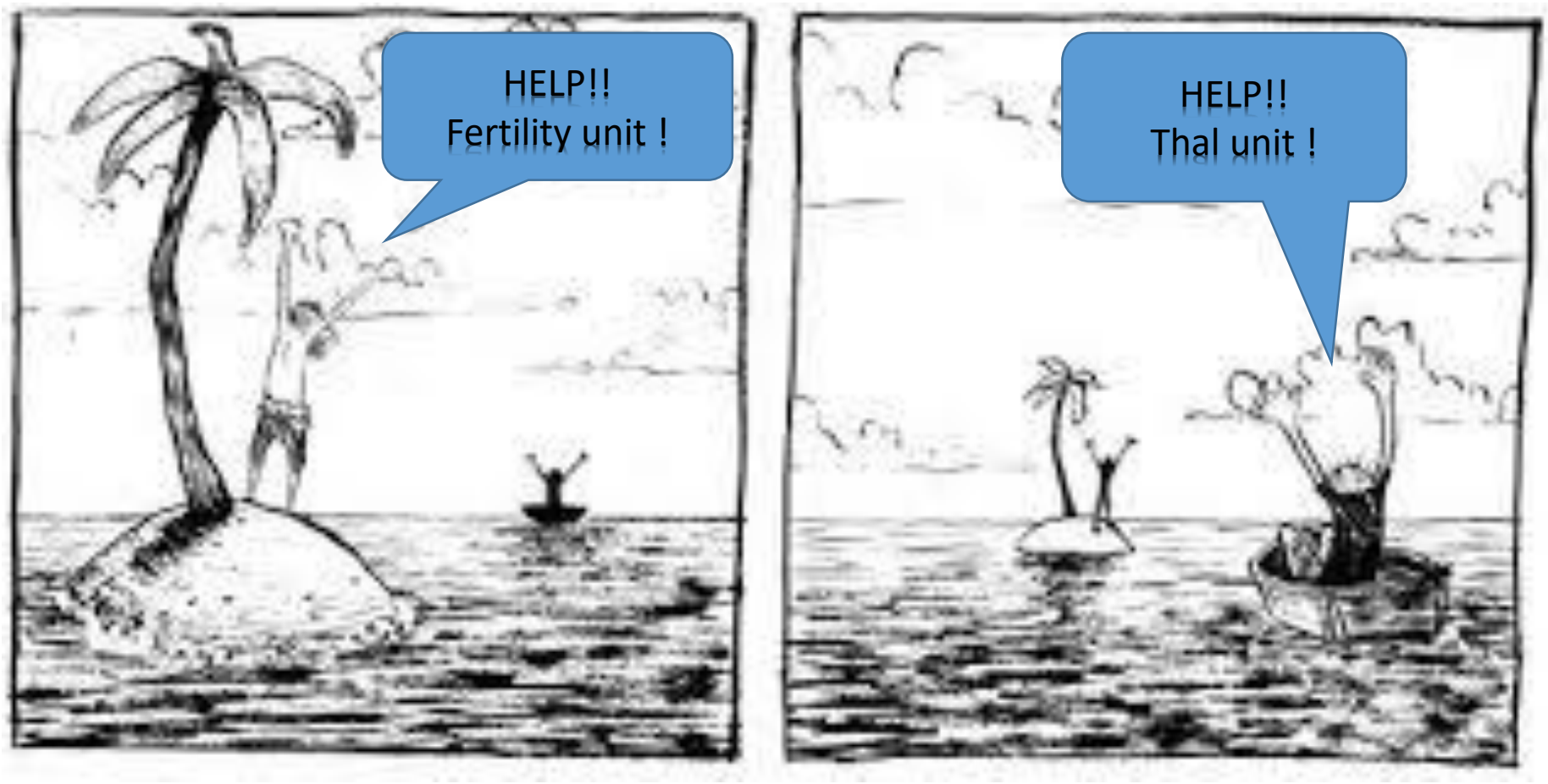

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