

Adult Case 1

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HRPB

25 years old man



- Fever for four days (since 10-7-12)
- Poor oral intake
- Myalgia , arthralgia
- Admitted to a private hospital on 13-7-2012 (D4)
- NSI Ag positive
- Afebrile since 15-7-2012 @ 8am (D6 defervescence)

D7 illness

- Received a call from the private physician on 16-7-12 @ 6pm (D7 defervescence 34 h)
 - Noted patient mildly breathless
 - HCT increasing trend – latest 55%
 - Platelet dropping
 - BP stable **WHAT ELSE DO YOU WANT TO KNOW?**
- Refer to GH for BETTER management

Warning signs of Dengue

Table 5 : Warning signs ^{8, level 8, 9, level 8}

- Abdominal pain or tenderness
- Persistent vomiting
- Clinical fluid accumulation (pleural effusion, ascites) 
- Mucosal bleed
- Restlessness or lethargy
- Tender enlarged liver
- Laboratory : Increase in HCT concurrent with rapid decrease in platelet 

What is your diagnosis?

D7 Dengue (likely DHF) with warning signs

Defervescence 34 hours

Not in shock

What will you ask the doctor to do before and during transfer?

Management

- Assess the haemodynamics status
 - Shock
 - Compensated
 - Decompensated
 - Non shock
- Fluid resuscitation
- Stabilize patient before transfer
- Continue fluid resuscitation during transfer
- Notify ED and medical MO/Specialist on call

Fluid management in dengue with warning signs

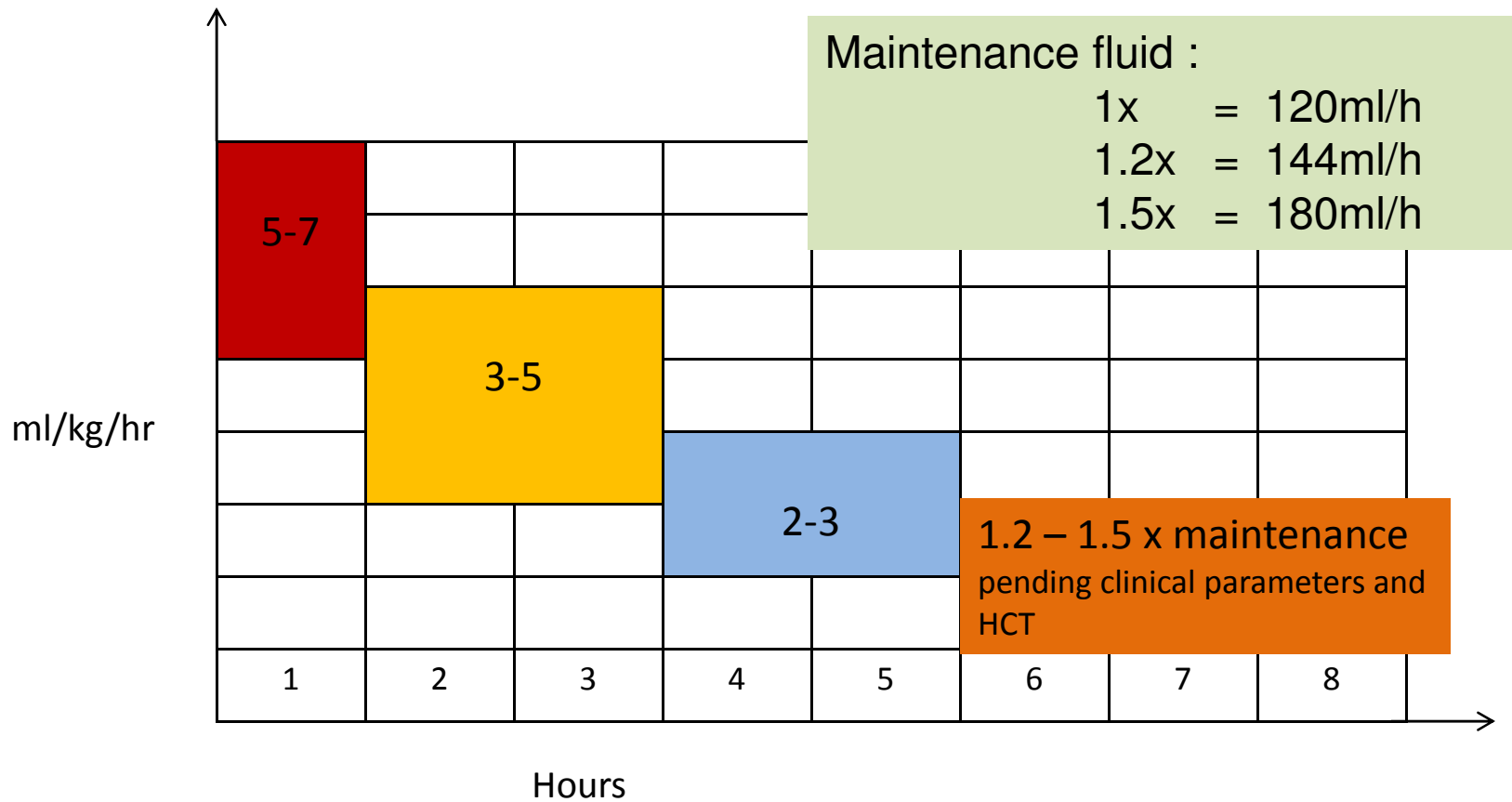
- Obtain baseline Hct
 - IVD 5-7mls/kg/hr for 1 to 2 hours, then
 - Reduce to 3-5mls/kg/hr for 2 to 4 hours, and then
 - Reduce to 2-3mls/kg/hr or less according to clinical response
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- If clinical parameters worsening and Hct is rising, increase the rate of infusion

Fluid resuscitation - how much?

Wt 80kg (ideal BW)

- 5mls/kg/hr for 1-2 hours
 - 400mls/hr = 1 pint hourly for 2 hours
- 3mls/kg/hr for 2-4 hours
 - 240mls/hr = 1 pint 2 hourly for 4 hours
- Continue fluid during transfer to GH

Fluid for Dengue with Warning Signs



Arrival in ED

What had happened to patient ?

- Past 2 days **Presence of warning signs and plasma leakage**
 - More breathless
 - Abdominal distension, tender RUQ
- Reduce urine output for 1 day
- T 36.3°C, BP=140/80 (PP 60), PR 88, RR 26
- Lung – reduced breath sound both bases
- CVS- DRNM
- Abd- ascites

Investigations

34 hrs defervescence

	D4	D5	D6		D7		
	13/7	14/7	15/7 8am		16/7 8am	16/7 12pm	16/7 6pm
Hb	12.6						
Hct	39.2	40.8	41.6	49.5	53.8	49.1	55.0
Plat	122	100	46	40	32	28	
Wbc	4.6		3.6		7.4		



Defervescence



Refer GH

Investigations

34 hrs defervescence



	D4	D5	D6	D7			
	13/7	14/7	15/7 8am	15/5 5pm	16/7 8am	16/7 12pm	16/7 6pm
Hb	12.6						
Plat	122	100	46	40	32	28	
Wbc	4.6		3.6		7.4		

NOT SURE HOW MUCH FLUID WAS GIVEN IN PRIVATE HOSPITAL



Defervescence



Refer GH

Progress – D7 illness

	16/7 12pm	16/7 6pm	11pm (ED GH)
Hb			14.5
Hct	49.1	55.0	45.4
Plat	28		26
Wbc			15.3

- After **5ml/kg** x 2 hrs - 2 pint NS (6-8pm)
- **3ml/kg** x 2 hrs - 3rd pint (8-10pm)
- 4th pint in progress (from 10 pm)



AFTER FLUID RESUSCITATION 5,3

Progress – D7 illness

	16/7 12pm	16/7 6pm	11pm (ED GH)
Hb			14.5
Hct	49.1	55.0	45.4
Plat	28		26
Wbc			15.3



AFTER FLUID RESUSCITATION 5,3

- What fluid regime to order now after review FBC 11 pm?
 - Currently 1 pint 2 hourly (3ml/kg/h = 240ml/h)
 - VS stable, HCT reducing
- IV 1.4x maintenance
 - 168ml/hr (~ 2ml/kg/h)
 - 1 pint every 3 hours

Progress – D7 illness

	16/7 6pm	11pm
Hb		14.5
Hct	55.0	45.4
Plat		26
Wbc		15.3

- **When to repeat FBC?**
 - 4-6 hours later
- **Monitoring – how frequent?**
 - Hourly
 - BP/PR/RR/CRT
 - Pulse pressure
 - Assess warning signs
 - Urine output
- CXR
- VBG ± Se lactate
- GXM

Progress – D7 illness


	16/7 6 pm	11pm	17/7 5 am
Hb		14.5	15.4
Hct	55.0	45.4	45.1
Plat		26	12
Wbc		15.3	18.6
HCO3		23.1	



45 hours defeverescence

- Admitted to dengue ward
- Other Ix
 - AST 227
 - Creat 77
- After review FBC 5 am, how much IVD to give?
 - On IVD 1.4x maintenance now (168ml/hr~ 2ml/kg/h)

Progress – D8 illness

	16/7 6 pm	11pm	17/7 5 am
Hb		14.5	15.4
Hct	55.0	45.4	45.1
Plat		26	12
Wbc		15.3	18.6
HCO3		23.1	

45 hours defeverscence

- Review patient
 - BP stable, HR 84
 - Less abdominal pain
 - Reduced BS both LZ
- Continue with IVD 1 pint 3 hourly (1.4X)
- Repeat FBC 4h later @ 9 am

Progress – D8 illness

	16/7 11 pm	17/7 5 am	9 am
Hb	14.5	15.4	14.7
Hct	45.4	45.1	43.9
Plat	26	12	11
Wbc	15.3	18.6	18.7

WBC 18.7 – lymphocytes 47.1%
monocytes 20.1%



49 hours defeverescence

- Review FBC 9 am
- **How much fluid now?**
- 49 hrs defeverescence
 - IVD reduced to maintenance at 10 am
 - FBC at 2 pm
- **Comments ?**
 - IVD should be reviewed earlier and stopped

Critical phase

- During critical phase, plasma leakage is the main cause for shock, subsequent bleeding, organ failure and death
- Critical phase will last only for 24 to 48 hours
- Need to monitor the total fluid balance during the entire course of dengue illness

Progress – D8 illness

	17/7 5 am	9 am	2 pm
Hb	15.4	14.7	13.9
Hct	45.1	43.9	41.4
Plat	12	11	27
Wbc	18.6	18.7	17.9



49 hours defeverscence

- Review 5pm
 - BP 130/80 (PP50) PR 88
 - Good volume pulse
 - RR 28, SaO2 97% (NP 3L)
 - Bilateral pleural effusion & ascites
- **What is your plan now?**
 - Refer ICU
 - off IVD
 - KIV low dose IV lasix
(patient in reabsorption phase)

Progress – D8 illness

	17/7 9 am	2 pm	8pm
Hb	14.7	13.9	12.6
Hct	43.9	41.4	37.7
Plat	11	27	27
Wbc	18.7	17.9	17.0



49 hours defeverescence

ABG 5 pm – HCO₃ 25.8 PaO₂ 89 mmHg

- Patient was transferred to ICU at 6pm
- IVD reduced 2 pint /24 hours
- **Comments?**
 - IVD should be off as it is now reabsorption phase (>48 h deferversence & stable HCT and monitoring)
- May give small boluses of IV Lasix with caution (e.g. 20mg)

Progress – D9 illness (ICU)

	17/7 8pm	18/7 6am	12pm
Hb	12.6	12.3	12.2
Hct	37.7	35.6	37.1
Plat	27	51	36
Wbc	17.0	12.3	12.6

- Review 9am
 - IVD off
 - IV lasix 20 mg
- Transfer out to ward 11 am

Progress – D9 & D10

	18/7 6am	12pm	6pm	19/7 6 am
Hb	12.3	12.2	12.9	11.8
Hct	35.6	37.1	38.8	36.2
Plat	51	36	46	75
Wbc	12.3	12.6	13.1	12.6



Transferred out from ICU
IV lasix 20 mg
Off IVD



Discharged

Thank you