Flowchart For The Management Of Prolonged Neonatal Jaundice In PKD Segamat

Chart A

Responsibility

Clinical Jaundice or
AOB>5mg/dL
(D14 - Term >37w)
(D21 - Pre-Term 35-37w)

SN

REFER MO same day

INITIAL ASSESSMENT
"Clerking and Referral Sheet for Prolonged Neonatal Jaundice"

MO

RISK STRATIFICATION

HIGH RISK
- Lethargic/Septic
- Poor Perfusion
- Respiratory Distress
- Poor Feeding

DISCUSS WITH FMS

STABILIZE ABC
REFER PAEDIATRICIAN IMMEDIATELY

MODERATE RISK
- AOB >17 mg/dL or Serum Bilirubin > 300µmol/L
- Conjugated Hyperbilirubinemia (DB >34µmol/L or >15% of TSB)
- New onset of jaundice (especially after Day 7)
- Pale stool
- Dark yellow urine (stains the diapers)
- Pallor
- Poor weight gain
- Hepatosplenomegaly

To also consider:
Jaundice and bottle fed > 50%
Jaundice > 1 month not investigated before
Other suspected medical condition
Significant family history

DISCUSS WITH FMS

REFER PAEDIATRIC TEAM
(To be reviewed the same day, or child relatively well, the next working day)

LOW RISK
Take Total Serum Bilirubin with Direct/ Indirect Bilirubin (same day or next working day)

MO

Continue Flow Chart B

WARNING SIGNS for parents:
(at any stage)

TCA STAT if unwell/pale stool/dark yellow urine/new onset of jaundice/persistent jaundice >2 months

Notes:
- New Concern: Any features in the High or Moderate Risk
- AOB: American Optical Bilirubinometer
- TSB: Total Serum Bilirubin
- SB: Serum bilirubin
- UFEME: Full and Microscopic Examination of Urine
- TSH: Thyroid Stimulating Hormone
- CONJUGATED HYPERBILIRUBINEMIA:
  Direct bilirubin more than 25µmol/L
  or more than 20% of the total bilirubin

$$\frac{\text{Direct Bilirubin}}{\text{Total Bilirubin}} \times 100 > 20\%$$

Reference:
1. INTEGRATED PLAN FOR DETECTION & MANAGEMENT OF NEONATAL JAUNDICE MOH/K/ASA/85.17(GU) (2nd REVISION)
2. FLOWCHART FOR THE MANAGEMENT OF PROLONG JAUNDICE IN PERAK STATE
3. FLOWCHART PROLONGED NNJ MANAGEMENT IN KLANG, SELANGOR
4. PEDIATRIC PROTOCOL 5TH EDITION

Flowchart For The Management Of Prolonged Neonatal Jaundice In PKD Segamat

Chart B

Responsibility

LOW RISK

OPTION A

Take Total Serum Bilirubin with Direct/ Indirect Bilirubin (same day or next working day)

Review 3 days later (D17-Term / D24-Pre-Term)
- Do clinical assessment
- Review blood result taken at D14-Term / D21-Pre-Term

MO

YES — CONJUGATED HYPERBILIRUBINEMIA OR NEW CONCERN — NO

Review at D21-Term / D28-Pre-Term
- Do clinical assessment
- Take AOB

MO

YES — AOB <5mg/dL Or no new concern — NO

If AOB <5mg/dL
- Discharged with advice on warning signs
- Continue child health follow up and immunisation schedule

Do Investigation same or next day
- *FBC +/- Retic count
- *UFEME +/- Urine C&S
- SB (direct & indirect bilirubin)
- Free T4/TSH

OPTION B

Do all the following investigations within Day 14 to Day 21:
- Total serum bilirubin + Direct/Indirect Bilirubin
- FBC +/- retic count
- UFEME +/- Urine C&S
- Free T4/ TSH

Review **FBC** and **UFEME** same day, d/w FMS &refer Paeds if suggestive for **infection/hemolysis**

MA / SN

Sensitivity and specificity of various tests for UTI

Test	Sensitivity % (range)	Specificity % (range)
Leucocyte esterase (LE)	83 (67-94)	78 (64-92)
Nitrite	53(15-82)	98 (90-100)
LE or nitrite positive	93 (90-100)	72 (58-91)
Pyuria	73 (32-100)	81 (45-98)
Bacteria	81(16-99)	83 (11-100)
Any positive test	99.8 (99-100)	70 (60-90)

Age	Hb g/dl	PCV %	Retics %	MCV fl Lowest	MCH pg Lowest	TWBC x1000	Neutrophil Mean	Lymphocyte Mean
Cord Blood	13-7-20.1	45-65	5.0	110	-	9-30	61	31
2 weeks	13.0-20.0	42-66	1.0	-	29	5-21	40	63
3 months	9.5-14.5	31-41	1.0	-	27	6-18	30	48
6 mths - 6 yrs	10.5-14.0	33-42	1.0	70-74	25-31	6-15	45	38
7 - 12 years	11.0-16.0	34-40	1.0	76-80	26-32	4.5-13.5	55	38
Adult male	14.0-18.0	42-52	1.6	80	27-32	5-10	55	35
Adult Female	12.0-16.0	37-47	1.6	80	26-34	5-10	55	35

Differential counts	
< 7 days age	neutrophils > lymphocytes
1 wk - 4 years	lymphocytes > neutrophils
4 - 7 years	neutrophils = lymphocytes
> 7 years	neutrophils > lymphocytes

Points to note
- Differential WBC: eosinophils: 2-3%; monocytes: 6-9 %
- Platelets counts are lower in first months of age; but normal range by 6 months
- Erythrocyte sedimentation rate (ESR) is < 16 mm/hr in children, provided PCV is at least 35%.

DISCUSS WITH FMS

REFER PAEDIATRIC TEAM (To be reviewed the same day, or child relatively well, the next working day)

REVIEW at D28-Term / D35-Pre-Term
- Do clinical assessment
- To review all investigation taken on D21-Term / D28-Pre-Term

MO

Yes — Abnormal result — No

*Home Visit Day 28-35 by Matron /Sister / PHN / JT (appointed by Matron)
-To review house condition and feeding

MO

No jaundice — Clinical assesment
- Baby still jaundice but well — Yes

- Discharge with advice on warning signs
- Continue child health follow up and immunisation schedule

No jaundice — Review at 6 weeks-old Clinical Assessment
- Baby still jaundice but well — Yes

MO

MO

YES — Review at 2 months-old Clinical Assessment
- Baby still jaundice but well

No jaundice

Discharge
Continue child health follow up and immunisation schedule

WARNING SIGNS for parents: (at any stage)

TCA STAT if unwell/pale stool/dark yellow urine/new onset of jaundice/persistent jaundice >2 months