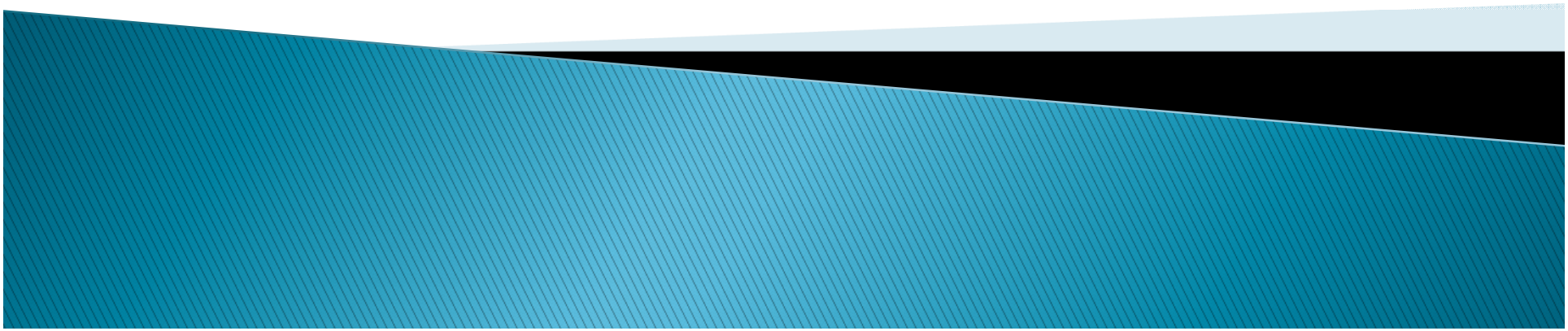
TROMBOCITOPENIA NEONATAL

Dra. Maria Ines Lagos
Servicio Neonatologia
HBPM 2014



CASO CLINICO

- RNPT 36 sem. AEG 3.125/48/35 - 10/03/14
- Cesárea por PTI materno (gg, corticoide, plaq)
- RN Inmediato : hto. 50% , plaq. 9.000
- 11/03/2014: plaq. 4.000 y equimosis en sitio de punción. se hospitaliza.
- Tratamiento:
  - GG 3 gr/kg en 48 hrs.
  - Metilprednisolona 30mgr/kg/dia por 4 dias
  - Eco cerebral: normal

CASO CLINICO

- Plaq.49.000, ALTA 18/3.prednisona 3mgr/kg/dia.
- Reingresa 23/03/14 por Rectorragia,rcto. plaquetas 9.000 y hto 31%.
- Tratamiento:
  - TGR y TR. Plaq. , 2° Eco cerebral normal.
  - Metilprednisolona, prednisona (4-2 mgr/kg)
  - 7/04: sin respuesta se pasa GG 2gr/kg en 48 hrs.
  - 10/04: plaq 288.000
  - Alta :11/04 con plaq. 204.000

CASO CLINICO

- Control policlínico:
  - Completo prednisona esquema descenso dosis.
  - 28/04/14: plaq. 186.00
  - 13/05/14: plaq. 108.000
  - Junio/14 : plaq. 255.000.
  - Madre mantiene PTI, en tto con prednisona . En estudio ante eventual esplenectomia. <30.000

TROMBOCITOPENIA NN

- DEFINICION:
- El recuento plaquetario < 150.000 en RN.
- Es la alteración hematológica mas frecuente del RN. Su mayor riesgo es HIC. Controversia con protocolos de Transfusion plaquetas.
- Mas frecuente en prematuros y RN enfermo.
- Se debe a disminución de producción o aumento del consumo plaquetario o ambas.
- Mayoría de las veces es leve y no requiere tto.

PREVALENCIA

- 1-5% de todos RN
- En 5-10% hay error de laboratorio, (repetir)
- UCIN:
  - 22 - 35%
  - PT: 750- 1000 grs : 75-90%
  - RNT asfixia: 2-52% (definición asfixia)
  - RCIU +PT: 80% causa de su Trombocitopenia
  - Policitemia: 5,5 - 51%

CLASIFICACION

- RECUENTO:
  - LEVE: 150.000 – 100.000
  - MODERADA: 100.000 – 50.000
  - SEVERA : < 50.000
- TIEMPO:
  - PRECOZ:
    - <72 hrs. de vida
  - TARDIA:
    - > 72 hrs de vida

CLASIFICACION

- DISMINUCION PRODUCCION PLAQ. :
  - Disminución o ausencia de megacariocitos M.O.
    - < MEGACARIOCITOS AISLADOS:
      - TAR , RUBEOLA, TRISOMIAS
    - ALT. M.O.(varias series)
      - ANEMIA FANCONI, OSTEOPETROSIS, ENF, INFILTRATIVAS (leucemias)
      - Enf . Metabolicas, hipertiroidismo materno
- AUMENTO CONSUMO PLAQ. :
  - Normal o aumento de megacariocitos M.O.

    Inmune (autoinmune, aloinmune) ,drogas maternas, infecciones, CIVD, hereditarias.
- COMBINACION:
  - Policitemia: >agregacion plaq > consumo ; y < megacariopoiesis por > eritropoiesis

CLASIFICACION

- TROMBOCITOPENIA NEONATAL PRECOZ:
  - RNPT :disminución producción asociado a hipoxia crónica fetal ,aumento eritropoeisis y disminución megacariopoiesis. Es leve y dura 10 días.
    - RCIU , HTA , HMD
  - RNT : aumento destrucción por anticuerpos. Es severa y dura hasta 3 meses.
    - Aloinmune (FNAIT), autoinmune(ITP)
- TROMBOCITOPENIA NEONATAL TARDIA:
    - Sepsis tardia , TORCH ,NEC relacionado a cateter

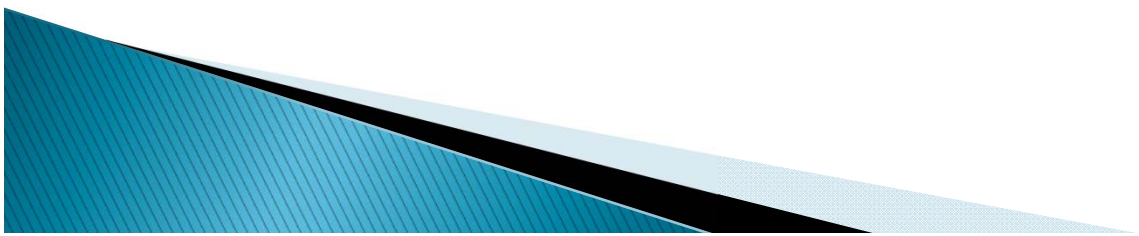


Table 10-8. Causes of Neonatal Thrombocytopenia

I. Normal or increased megakaryocytes in the marrow (megakaryocytic thrombocytopenia)

- A. Immune disorders
  - 1. Autoimmune (passive transfer of platelet antibody) (NITP)
    - a. Maternal ITP
    - b. Maternal drug-induced thrombocytopenia
    - c. SLE
  - 2. Alloimmune (NATP)
    - a. Isolated platelet group incompatibility
    - b. Associated with blood group incompatibility
- B. Infection
  - 1. Bacterial: gram-negative and gram-positive septicemia, listeriosis
  - 2. Viral: cytomegalovirus, rubella, herpes simplex, coxsackievirus
  - 3. Protozoal: toxoplasmosis
  - 4. Spirochetal: syphilis
- C. Drugs
  - 1. Immune: drug–hapten disease (e.g., quinine, quinidine, sedormid)
  - 2. Nonimmune: thiazide, tolbutamide (given to mother)

(Continues)

Table 10-8. (*Continued*)

D. Disseminated intravascular coagulation
   1. Prenatal causes
      a. Preeclampsia and eclampsia
      b. Abruptio placentae
      c. Dead twin fetus
      d. Amniotic fluid embolism
   2. Intranatal causes
      a. Breech delivery
      b. Fetal distress
   3. Postnatal causes
      a. Infections
      b. Hypoxia and acidosis
      c. Respiratory distress syndrome
      d. Renal vein thrombosis
      e. Indwelling catheters
      f. Giant hemangioma

E. Inherited thrombocytopenia
   1. Sex-linked
      a. Pure
      b. Wiskott–Aldrich syndrome[a]
   2. Autosomal
      a. Pure (dominant or recessive)
      b. Bernard-Soulier syndrome
      c. May Hegglin anomaly

II. Decreased or absent megakaryocytes in the marrow (amegakaryocytic thrombocytopenia)

A. Isolated megakaryocytic hypoplasia (Table 10-9)
   1. Thrombocytopenia absent radii (TAR syndrome)
   2. Congenital megakaryocytic hypoplasia without anomalies
   3. Congenital hypoplastic thrombocytopenia with microcephaly
   4. Rubella syndrome[b]
   5. Congenital hypoplastic thrombocytopenia associated with trisomy syndromes
   6. Thrombocytopenia agenesis of corpus callosum
   7. Fanconi anemia
   8. Hoyeraal–Hreidarsson syndrome
   9. Amegakaryocytic thrombocytopenia with radio-ulnar synostosis (ATRUS)
   10. Dyskeratosis congenita (DC)

B. Generalized bone marrow disorders
   1. Bone marrow aplasia
      a. Fanconi anemia
      b. Pancytopenia without congenital anomalies
      c. Osteopetrosis
   2. Bone marrow infiltration
      a. Congenital leukemia
      b. Langerhans cell histiocytosis
      c. Congenital neuroblastoma

C. Metabolic causes
   1. Associated with acidosis and ketosis
      a. Hyperglycinemia
      b. Methylmalonic acidemia
      c. Isovaleric acidemia
      d. Propionic acidemia
   2. Other
      a. Maternal hyperthyroidism[c]

---

[a]Decreased production and poor survival of small defective platelets.
[b]Decreased megakaryocytes but not confirmed at autopsy. ? Error in sampling.
[c]Pathogenesis not determined.

RIESGO HEMORRAGIA

- 5-15% hgia. Ocurre en UCIN y trombocitopenia severa.
- Hgia. mas grave es intraventricular (IVH), luego pulmonar y GI.
- Controversia rcto. Plaquetario y hemorragia.
- Factor riesgo hgia.:
  - **EG y peso nacimiento** (gran vascularización matriz germinal)
  - Apgar, acidosis, parto vaginal, VM ,trast. Coagulación, NEC, CIVD, uso indometacina y surfactante.

FNAIT ALOINMUNE O ISOINMUNE

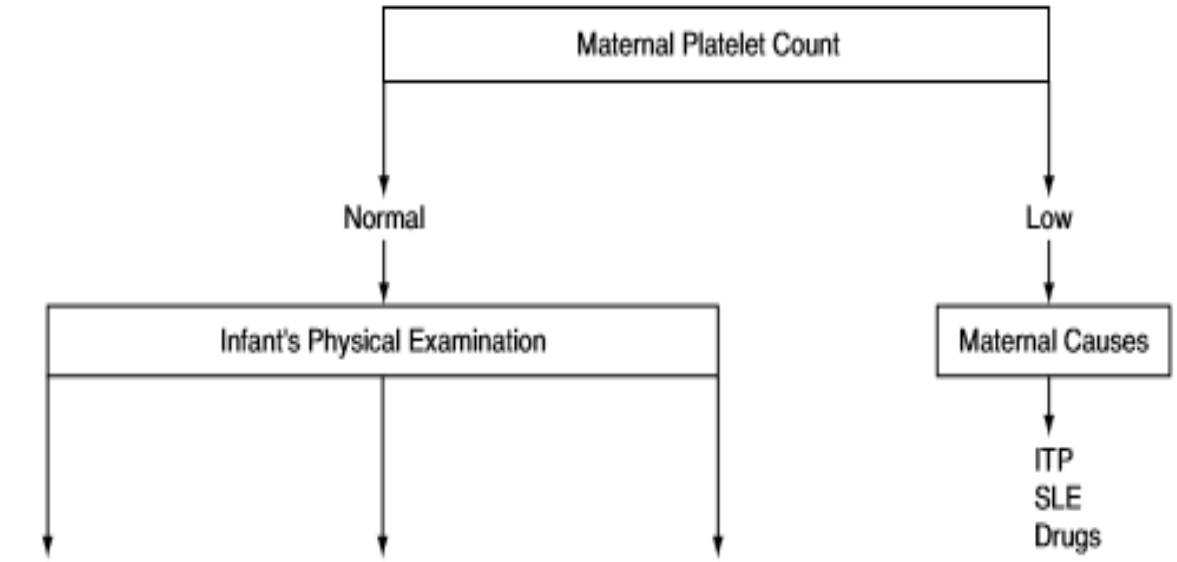
- Fetal o neonatal trombocitopenia inmune
- Generalmente es severa
- Etiología: son anticuerpos antiplaquetarios maternos desarrollados durante el embarazo o previos contra plaquetas de feto o RN.
- Madre con rcto. Plaquetario normal
- Asocia a HIV en 10-20%. En 80% antenatal.
- Dura 2 semanas, pero puede prolongarse.
- Tto.: Tr. Plaquetas . GG , corticoides

ITP AUTOINMUNE

- Traspaso de autoanticuerpos maternos secundarios a enfermedad materna (PTI,LES)
- Riesgo 50% RN tenga trombocitopenia.
- Trombocitopenia severa en 8 a 13%
- Riesgo de HIV es baja , de 1%.
- Controlar en RN inmediato y luego por primera semana. Puede durar hasta 3 meses.
- Tto.:
  - GG 1-2 gr/kg/48 hrs
  - Metilprednisolona 10-30mgr/kg /dia por 3-5 dias
  - Tr.Plaq. En caso hgia. grave

DIAGNOSTICO

- Clinica RN , malf. Congenitas, sepsis
- Antecedentes maternos: preeclampsia , HELLPS, Diabetes, hipertiroidismo, drogas ,alt. placenta.
- Recuento plaquetario materno
- Hemograma RN cordon, y primera semana de vida.
- Ac antiplaquetarios: Bajo rendimiento.
- Rx radio
- mielograma



Normal	Hepatosplenomegaly	Congenital anomalies
NATP	Infection	TAR syndrome
NITP	Congenital leukemia	Fanconi anemia*
Drug-induced	Congenital neuroblastoma	Trisomy 13, 18
Metabolic disorders	Langerhans cell histiocytosis	Rubella syndrome
Congenital thrombocytopenia without anomalies		Dyskeratosis congenita
		Kasabach-Merritt syndrome

Fig. 10-3. Diagnostic approach to infant with thrombocytopenia. *Thrombocytopenia usually occurs at 4–6 years of age in Fanconi anemia.

TRATAMIENTO

- Se basa en Transfusión de Plaquetas:
  - terapeutico (hgia.)
  - profiláctico (sin hgia.)
- El 98% de tratamiento es profiláctico.
- No existe evidencia que transfusión de plaquetas disminuya hemorragia. Por eso hay tanta divergencia en los protocolos
- 10-20 ml/kg.

TRATAMIENTO TERAPEUTICO

- Recuento plaquetas < 50.000 y hemorragia.
- Centros :
  - con <100.000.
  - En Francia : hemorragia siempre tr. Plaq., independiente recto. Plaquetario.

TRATAMIENTO PROFILACTICO

- Indicado cuando recuento plaq. es < 50.000 .
- En otros centros en < 100.000.
- Trabajos:
  - 2 grupos : 50.000 – 150.000. para tr. Plaquetas. No hubo diferencias en HIV.
  - 2 grupos RN UCIN: tto . Profilactico (distintos rangos) y tto terapeutico. No hubo diferencias HIV.
  - Estudio 2017: 2 grupos : tto profilactico con 50.000 y 25.000.

BIBLIOGRAFIA

THE JOURNAL OF PEDIATRICS • www.jpeds.com

ORIGINAL ARTICLES

Primary Hemostasis in Neonates with Thrombocytopenia

Emoke Deschmann, MD[1,2], Martha Sola-Visner, MD[1], and Matthew A. Saxonhouse, MD[3,4]

Objective To evaluate the relationship between platelet counts and the platelet function analyzer-100 closure times (CTs) in neonates with thrombocytopenia, and to determine what other factors significantly affect CTs.

Conclusions Platelet counts <90 × 10^9/L are associated with prolonged CT-ADP times in some but not all infants. Gestational and postnatal age-related differences in platelet function account for some of this variability. The predictive value of CT-ADP on neonatal bleeding risk remains to be studied. (*J Pediatr* 2014;164:167-72).

Ann Hematol (2013) 92:961–967
DOI 10.1007/s00277-013-1726-0

ORIGINAL ARTICLE

Thrombocytopenia in neonates: causes and outcomes

Ezgi Ulusoy · Özlem Tüfekçi · Nuray Duman · Abdullah Kumral · Gülersu İrken · Hale Ören

Received: 7 August 2012 / Accepted: 6 March 2013 / Published online: 22 March 2013

PACIENTES Y METODO

- Estudio retrospectivo , análisis de RN con trombocitopenia , entre Enero 2007 a diciembre 2011.
- 3.515 RN hospitalizados
- 134 RN (3,8%) trombocitopenia.
  - 64% sexo masculino
  - 72% prematuros

Table 1 Indications for neonatal platelet transfusion

Platelet count	Clinical indication
$<30\times10^9$/L	• All neonates
$30–49\times10^9$/L	• Clinically unstable (high ventilation requirements, fluctuating BP)
	• <1,000 g and <1 week of age
	• Previous major bleeding tendency (grade 3–4 IVH)
	• Concurrent coagulopathy
	• Current minor bleeding: puncture site oozing, blood-stained ET secretions
	• Requiring surgery or exchange transfusion
$50–99\times10^9$/L	• Major bleeding

BP blood pressure, *IVH* intraventricular hemorrhage, *ET* endotracheal tube

Table 3 The time for detection and resolving of thrombocytopenia and nadir platelet counts

Thrombocytopenia	Mean (n±SD)	Median
Detection day	Day 4±8.3	Day 1
Nadir day	Day 6±10	Day 3
Nadir platelet count	56×10^9/L±30×10^9/L	52×10^9/L
Resolving day	Day 16±22	Day 10

Table 4 Causes of thrombocytopenia in early- and late-onset thrombocytopenia

	Causes of thrombocytopenia	*n* (%)
Early-onset thrombocytopenia (≤72 h)	IUGR	25 (18)
	Preeclamptic mother's baby	13 (9.7)
	Early-onset infections (septicemia)	10 (7.4)
	Mother with thrombocytopenia	6 (4.4)
	Mother with ablatio placenta	4 (3)
	Perinatal asphyxia	4 (3)
	Rh izoimmunization	4 (3)
	Mother with ITP	3 (2.2)
	Hydrops fetalis	4 (3)
	NAIT	2 (1.5)
	Down syndrome	2 (1.5)
	Congenital anomalies	2 (1.5)
	Mother with GDM	2 (1.5)
	Mother with HELLP syndrome	2 (1.5)
	Metabolic disease(citrullinemia)	1 (0.7)
Late-onset thrombocytopenia (>72 h)	Late-onset infections (septicemia)	35 (26)
	Drug induced (indomethacin, ibuprofen)	5 (3.7)
	Septicemia + drug induced (indomethacin)	4 (3)
	NEC	3 (2.2)
	Metabolic disease (MMA)	1 (0.7)

IUGR intrauterine growth restriction, *ITP* immune thrombocytopenia, *NAIT* neonatal alloimmune thrombocytopenia, *GDM* gestational diabetes mellitus, *NEC* necrotizing enterocolitis, *MMA* methylmalonic acidemia, *HELLP* hemolysis, elevated liver enzymes, and low platelet count

Table 6 Pathological hemorrhage

	Number		Percent	
	Term	Preterm	Term	Preterm
Gastrointestinal system hemorrhage	1	4	0.7	2.9
Pulmonary hemorrhage	1	2	0.7	1.2
Intracranial hemorrhage	0	8	0	5.9
Total	2	14	1.4	10

Review

EXPERT REVIEWS

Neonatal thrombocytopenia: etiology, management and outcome

Expert Rev. Hematol. 7(3), 387–395 (2014)

Suzanne F Gunnink[1], Roos Vlug[2]

Thrombocytopenia is a very common hematological abnormality found in newborns, especially in preterm neonates. Two subgroups can be distinguished: early thrombocytopenia, occurring

Table 1. Classification of neonatal thrombocytopenia related to the time of onset.

Early-onset thrombocytopenia (<72 h)	Late-onset thrombocytopenia (>72 h)
Chronic fetal hypoxia (diabetes, pregnancy-induced hypertension)	Acquired bacterial infection
Asphyxia	Necrotizing enterocolitis
Fetal/neonatal alloimmune thrombocytopenia	Viral infection (e.g., herpes simplex virus, acquired cytomegalovirus)
Viral infections (HIV, enterovirus)	Catheter-related thrombosis
Renal vein thrombosis	Heparin-induced thrombocytopenia
Polycythemia	Fanconi anemia
Chromosomal (Trisomy 13, 18, 21)	
Bone marrow replacement (e.g., congenital leukemia)	
Perinatal infection (*Escherichia coli*, group B streptoccus)	
DIC	
Autoimmune	
Kasabach–Merritt syndrome	
Metabolic disorders	
Drug induced	
Congenital infections (TORCH)	
Hereditary thrombocytopenia[†]	

[†]Hereditary thrombocytopenia include: thrombocytopenia-absent radii, Amegakarycocytic thrombocytopenia and radioulnar synostosis, Congenital amegakaryocytic thrombocytopenia, Fanconi anemia, MYH9-related thrombocytopenia, von Willebrand disease type 2B, Thrombotic–thrombocytopenic purpura, Wiskott–Aldrich syndrome, Chediak–Higashi syndrome, Bernard–Soulier syndrome and Paris–Trousseau syndrome.
DIC: Disseminated intravascular coagulation.

Table 2. Summary of various platelet transfusion guidelines in western countries.

Country	Bleeding		Prophylaxis		Do
Netherlands	50 x 10^9/l		20 x 10^9/l 50 x10^9/l	Always Sick newborn, <1500 g and <32 weeks	At l
UK	50 x 10^9/l 100 x 10^9/l	Minor bleeding Major bleeding	30 x 10^9/l 50 x 10^9/l 100 x 10^9/l	Well infants Clinical instability; coagulopathy; <1000 g and age <1 week; previous major bleeding; current minor bleeding; platelet count likely to fall below 30 consider when platelet count falls rapidly	10-
France	Always		20 x 10^9/l 50 x 10^9/l	Stable premature; term newborn premature with risk factors for bleeding; presence of DIC	20
Italy	50–100 x 10^9/l		20–30 x 10^9/l 30–50 x 10^9/l	Consider transfusion Consider transfusion if: 'critical neonate'; <1000 g and age <1 week; previous cerebral hemorrhage; coagulopathy	10-
Canada	50 x 10^9/l 100 x 10^9/l Always	 Increased bleeding risk Platelet functional disorder	20 x 10^9/l 30 x 10^9/l 50 x 10^9/l	Stable term Stable premature Sick premature	5–1

Key issues

- Thrombocytopenia occurs often in newborns, especially those admitted to neonatal intensive care units.
- Early thrombocytopenia (occurring <72 h after birth) is associated with intrauterine growth restriction. The main causes of late thrombocytopenia (occurring >72 h after birth) are sepsis and necrotizing enterocolitis.
- A causal relationship between thrombocytopenia and bleeding has never been demonstrated.
- The majority of neonates with severe thrombocytopenia receive prophylactic platelet transfusions, but the effect of these platelet transfusions on preventing major bleeding has not been proven and transfusions are associated with risks.
- We urgently need evidence on the indication and dose of prophylactic platelet transfusion in neonatal thrombocytopenia.

PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Incidence and Consequences of Neonatal Alloimmune Thrombocytopenia: A Systematic Review

Marije M. Kamphuis, Noortje P. Paridaans, Leendert Porcelijn, Enrico Lopriore and Dick Oepkes

Pediatrics 2014;133;715; originally published online March 3, 2014;
DOI: 10.1542/peds.2013-3320

TABLE 1 Outcome of Postnatal Screening Studies for NAIT Included in the Analysis

Author Year	Included/Total Newborns[a]	Newborns Tested[b]	Severe Thrombocytopenia (PC <50 × 10^9/L)	Bias Assessment	Severe NAIT (PC <50 × 10^9/L + HPA Antibodies)	ICH Antenatal Origin	ICH Postnatal Origin
Burrows 1993[8]	16 068/16 124	15 932 (99%)	19 (0.12%)	4	10 (0.06%)	3 (0.02%)	0
Panzer 1995[9]	NA	933	4	2	0	0	0
Dreyfus 1997[1]	6081/8836	5632 (93%)	9 (0.16%)	2	4 (0.07%)	1 (0.02%)	0
De Moerloose 1998[2]	9485	8388 (88%)	10 (0.12%)	3	3 (0.04%)	1 (0.01%)	0
Sainio 2000[10]	4588/5285	4489 (98%)	11 (0.24%)	4	2[c] (0.04%	0	0
Uhrynowska 2000[11]	26 275	24 101 (90%)	36 (0.15%)	3	5[d] (0.02%)	1 (0.004%)	0
Total		59 475	89 (0.15%)		24 (0.04%)	6 (0.01%)	0

PC, platelet count; NA, not available.

[a] Actual included cases versus total newborns in the study period.

[b] Actual amount of newborns tested for thrombocytopenia.

[c] 1 case PC 37 × 10^9/L HPA-1a incompatibility, no anti HPA-1a antibodies detected.

[d] 1 case PC 31 × 10^9/L HPA-1a incompatibility, no anti HPA-1a antibodies detected.

RESULTS: From the initial 768 studies, 21 remained for full text analysis, 6 of which met the inclusion criteria. In total, 59 425 newborns were screened, with severe thrombocytopenia in 89 cases (0.15%). NAIT was diagnosed in 24 of these 89 newborns (27%). In 6 (25%) of these cases, an intracranial hemorrhage was found, all likely of antenatal origin.

CONCLUSIONS: NAIT is among the most important causes of neonatal thrombocytopenia. Intracranial hemorrhage due to NAIT occurs in 10 per 100 000 neonates, commonly before birth. Screening for NAIT might be effective but should be done antenatally. *Pediatrics* 2014;133:715–721

Int J Hematol (2014) 99:570–576
DOI 10.1007/s12185-014-1562-6

ORIGINAL ARTICLE

Factors predictive of neonatal thrombocytopenia in pregnant women with immune thrombocytopenia

Koji Kawaguchi · Kousaku Matsubara · Toshiro Takafuta · Isaku Shinzato · Yasuhiro Tanaka · Aya Iwata · Hiroyuki Nigami · Yasuhito Takeuchi · Takashi Fukaya

Received: 19 December 2013 / Revised: 21 February 2014 / Accepted: 23 February 2014 / Published online: 13 March 2014

Table 1 Maternal and neonatal characteristics in a total of 44 pregnancies

Characteristics	Mean ± SD (range) or number (%)
Maternal characteristics	
Maternal age at delivery (years) ($n = 44$)	30.7 ± 4.4 (21—41)
Diagnosis of ITP before pregnancy ($n = 30$)	21 (70 %)
Diagnosis of ITP during pregnancy ($n = 30$)	9 (30 %)
Number of pregnancies per mother ($n = 30$)	
1 time	19 (63 %)
2 times	8 (27 %)
3 times	3 (10 %)
Platelet count ($n = 44$)	
At nadir ($\times 10^9$/L)	71.3 ± 35.0 (13—161)
At delivery ($\times 10^9$/L)	105.8 ± 40.3 (38—248)
Treatment for maternal ITP	
Before pregnancy ($n = 30$)	
Splenectomy	3 (10 %)
PSL	2 (7 %)
During pregnancy ($n = 44$)	
PSL or mPSL	9 (20 %)
IVIG	1 (2 %)
PSL + IVIG + platelet transfusion	1 (2 %)
Mode of delivery ($n = 44$)	
Cesarean section	25 (57 %)
Vaginal	19 (43 %)

Neonatal characteristics ($n = 44$, unless otherwise mentioned)	
Gestational age at birth (weeks)	38.2 ± 1.6 (33–41)
Premature delivery (<37 weeks of gestation)	3 (7 %)
Birth weight (g)	2938 ± 439 (1668–3706)
Low-birth-weight infant (<2500 g)	6 (14 %)
Neonatal platelet count at birth ($\times 10^9$/L)	192.5 ± 85.5 (4–399)
≥150 $\times 10^9$/L	36 (82 %)
100–149 $\times 10^9$/L	1 (2 %)
50–99 $\times 10^9$/L	3 (7 %)
20–49 $\times 10^9$/L	2 (5 %)
<20 $\times 10^9$/L	2 (5 %)
Neonatal platelet count at nadir ($\times 10^9$/L) ($n = 39$)	157.7 ± 88.1 (4–351)
≥150 $\times 10^9$/L	21 (54 %)
100–149 $\times 10^9$/L	8 (20 %)
50–99 $\times 10^9$/L	3 (8 %)
20–49 $\times 10^9$/L	4 (10 %)
<20 $\times 10^9$/L	3 (8 %)
Treatment for neonatal thrombocytopenia	
IVIG	4 (9 %)
PSL or mPSL + IVIG	2 (4 %)
PSL + mPSL + IVIG + platelet transfusion	1 (2 %)

ITP immune thrombocytopenia, *IVIG* intravenous immunoglobulin, *PSL* prednisolone, *mPSL* methylprednisolone

Journal of Paediatrics and Child Health

doi:10.1111/j.1440-1754.2012.02528.x

REVIEW ARTICLE

Review of neonatal alloimmune thrombocytopenia

David C Risson,[1,2] Mark W Davies[1,2] and Bronwyn A Williams[3,4]

[1]Grantley Stable Neonatal Unit, Royal Brisbane and Women's Hospital, [2]Department of Child Health, University of Queensland, Brisbane, [3]Haematology Department, Queensland Health Pathology and Scientific Services, Herston and [4]Haematology Service, Royal Children's Hospital Brisbane, Brisbane, Queensland, Australia

Table 2 Antenatal treatment based on risk stratification

Variable	Extremely high risk	Very high risk	High risk
Definition	Previous sibling: in utero ICH in second trimester	Previous sibling: in utero ICH in third trimester	Previous sibling: perinatal ICH
Start	12-week GA	12-week GA	
Regimen†	• Initially, IVIG at 2 gm/kg/week • Add prednisone 1 mg/kg/day at 24–26 weeks GA • First FBS at 32 weeks GA • Additional salvage‡ treatment and/or early delivery based on FBS results	• Initially, IVIG at 1 gm/kg/week • Add prednisone 1 mg/kg/day or second IVIG 1 gm/kg/week at 20 weeks GA • First FBS at 32 weeks GA • Additional salvage‡ treatment and/or early delivery based on FBS results • If FBS is unable to be performed or not performed for other reasons including patient and/or physician choice, salvage therapy could be empirically instituted	

†Empiric addition of salvage treatment based on results reported[50] and with intent to avoid FBS <32 weeks GA. ‡Salvage therapy – therapy was intensified if there was not satisfactory response (defined as platelet count of $>30 \times 10^9$/L) to initial treatment. For example, if initial therapy was IVIG at 1 gm/kg/week, therapy was increased to IVIG 2 gm/kg/week or prednisone 1 mg/kg/day was added. Table used with permission of author. FBS, fetal blood sampling; GA, gestational age; ICH, intracranial haemorrhage; IVIG, intravenous immunoglobulin.

PTI

- Purpura trombocitopenico inmune en pediatria.
- Define con rcto plaq. < 100.000
- Descartar causas secundarias
- Etiología es por anticuerpos.
- Ultimo consenso chileno -. Rev chilena pediatria.2011; 82(4) :351-357.

PINDA PARCIAL

- Febrero 2014
- Se autoriza nuevas patologías GES:
  - pinda parcial,
  - gran quemado,
  - oxido nítrico.
- Pinda parcial:
  - Tumores SNC : Valdivia a Pta. Arenas
  - Linfomas