

نوزاد نارس پرخطر مبتلا به زردی

دکتر افسانه آخوند زاده

دکتر سعید عالی نژاد

▶ بیمار نوزاد پسر با $GA=30W$ متولد ۱۴۰۱/۶/۷ حاصل سزارین

G6P3Ab2D0

▶ به دلیل PPR0M و دکولمان تحت C/S قرار گرفته است.

▶ آپیگار بیمار 5/7 و $BBW = 1400$

▶ DH مادر : تحت درمان با اسپری سالبوتامول و تئوفیلین G به دلیل آسم

۲دوز بتامتازون

▶ مایع آمونیوتیک : clear

- ▶ PH / EX
- ▶ PR = 120
- ▶ RR= 62
- ▶ Grunting + , Retune= mild

افت saturation نداشته است ▶

- ▶ Heart = Normal
- ▶ No Major Abnormality

▶ **بند ناف ABG**

▶ **PH = 7.25**

▶ **PCO2 = 57**

▶ **BE = -8**

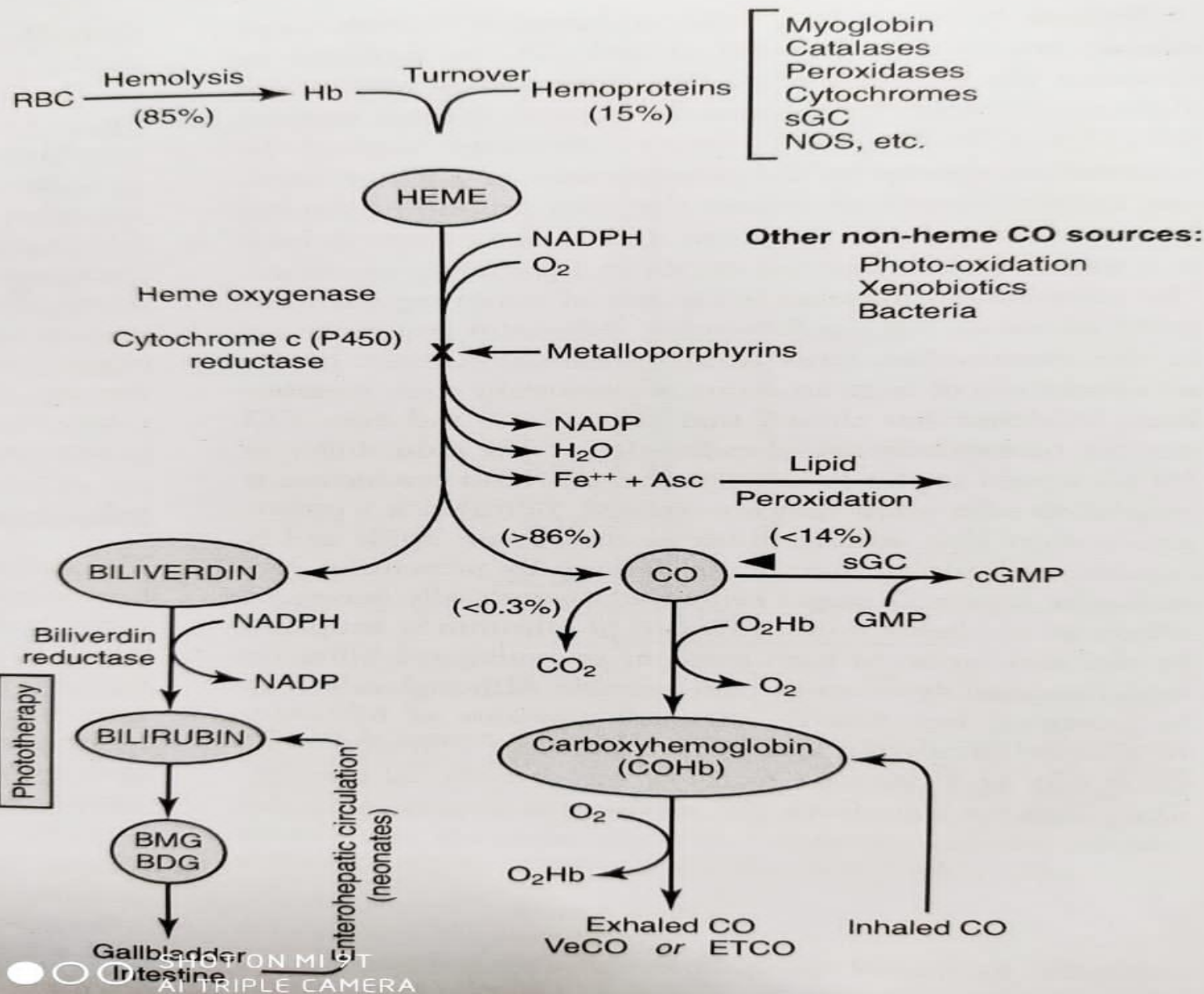
▶ **HCO3 = 17**

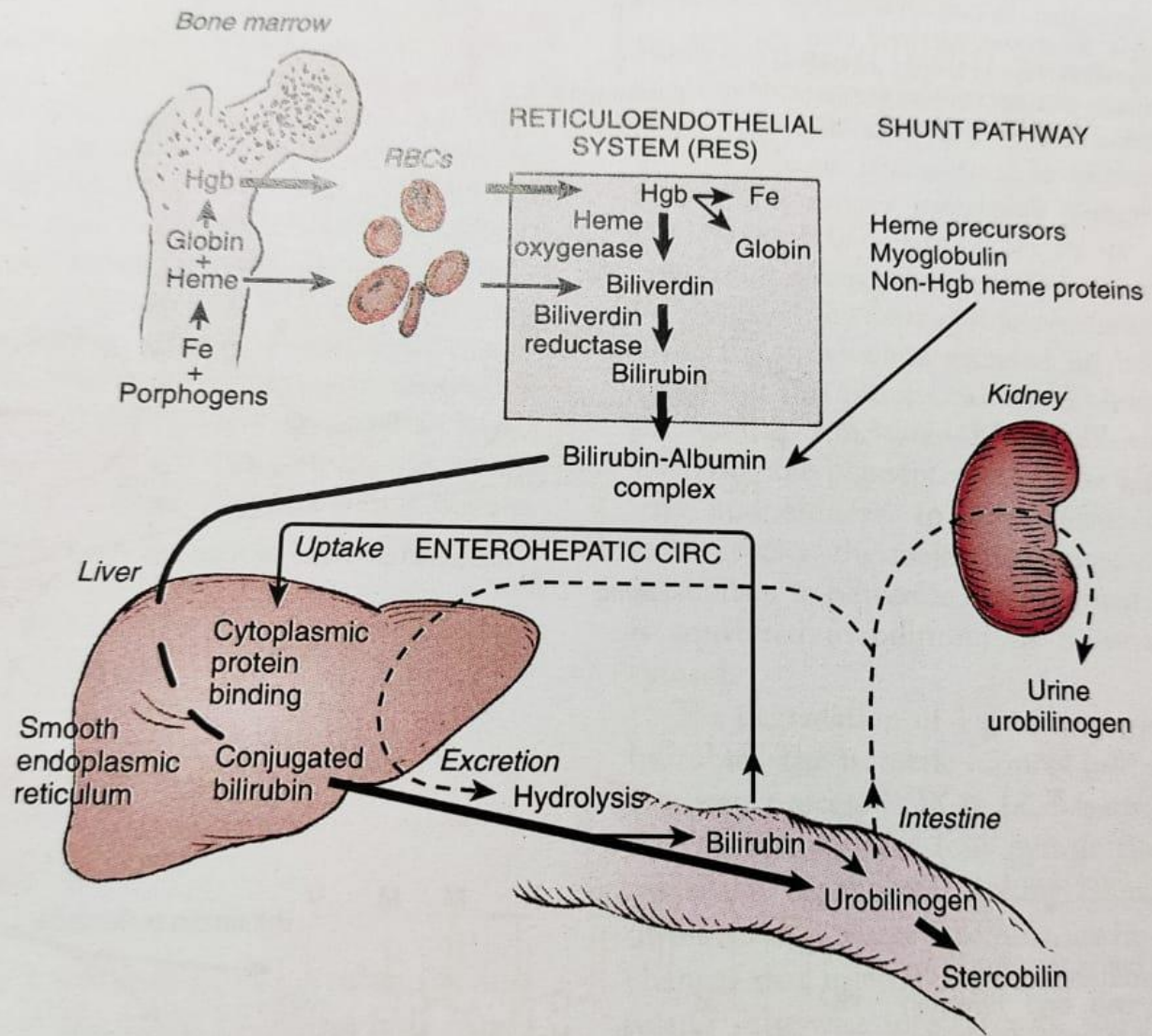
▶ **PO2 = 18**

طرز برخورد اولیه با نوزاد نارس مبتلا به دیسترس تنفسی

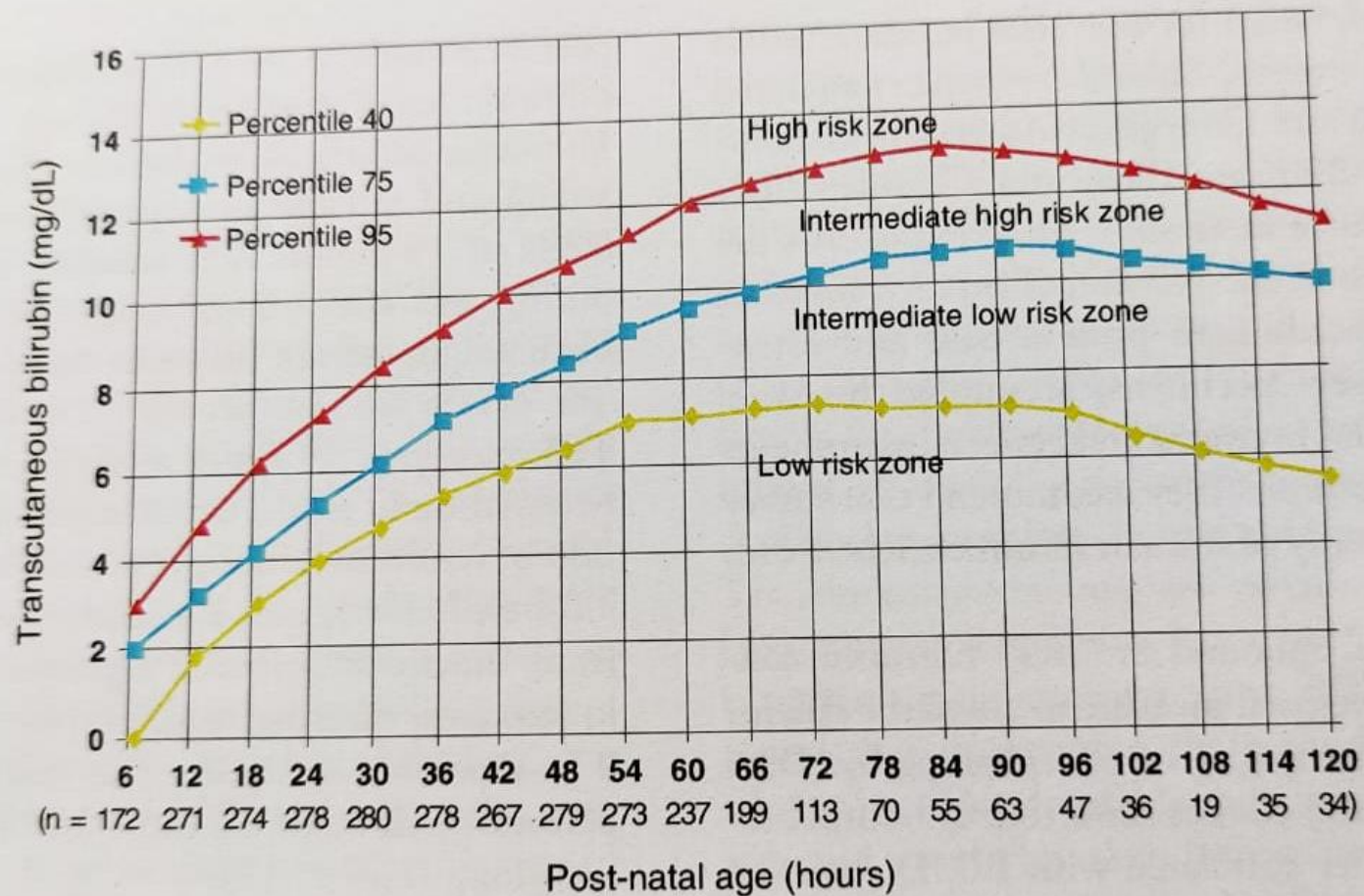
در سیر بیماری نوزاد دچار **icter** میشود و در روز دوم تولد
Bill=8 , D.Bill = 0.7 پیدا میکند.

- ▶ Retic = 8
- ▶ Coombing = Nog
- ▶ BC , Rh = B+
- ▶ M = O+
- ▶ CBC , WBC = 19000
- ▶ Hb = 21
- ▶ HCT = 34
- ▶ MCV = 89
- ▶ MCH = 25
- ▶ PH = 320.000





• **Fig. 91.3** The pathways of bilirubin synthesis, transport, and metabolism. Hgb, hemoglobin; RBCs, red blood cells. (From Assali NS. *Pathophysiology of gestation*. New York: Academic Press; 1972.)



• **Fig. 91.17** Hour-specific transcutaneous bilirubin (TcB) nomogram constructed from 3303 measurements from 1059 neonates. The percentile values were divided into four groups following the pattern of the Bhutani hour-specific TB nomogram. (From Bromiker R, et al. Israel TcB nomogram predicts significant hyperbilirubinemia. *J Perinatol.* 2017;37(12):1315-1318.)

• **BOX 91.2** Risk Factors for Development of Severe Hyperbilirubinemia in Infants ≥ 35 Weeks of Gestation

Major Risk Factors

- PredischARGE TB or TcB level in the high-risk zone (see Fig. 91.10)
- Jaundice observed in the first 24 hours
- Blood group incompatibility with positive DAT, other known hemolytic disease (e.g., G6PD deficiency)
- Gestational age 35-36 weeks
- Previous sibling received phototherapy
- Cephalohematoma or significant bruising
- Exclusive breastfeeding, particularly if nursing poorly and weight loss is excessive
- East Asian race

Minor Risk Factors

- PredischARGE TB or TcB in the high intermediate-risk zone
- Gestational age 37-38 weeks
- Jaundice observed before discharge
- Previous sibling with jaundice
- Macrosomic infant of diabetic mother
- Maternal age ≥ 25 years
- Male sex

Factors Associated with Decreased Risk of Significant Jaundice*

- TB or TcB in the low-risk zone (see Fig. 91.10)
- Gestational age ≥ 41 weeks
- Exclusive bottle feeding
- African-American race
- Discharge from hospital after 72 hours

DAT, Direct antiglobulin test; G6PD, glucose-6-phosphate dehydrogenase; TB, total bilirubin; TcB, transcutaneous bilirubin.

*Listed in order of decreasing importance.

From American Academy of Pediatrics Subcommittee on Hyperbilirubinemia. Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. *Pediatrics*. 2004;114:297.

• **BOX 91.1** Conditions Associated With Increased Erythrocyte Destruction

Isoimmunization

- Rh incompatibility
- ABO incompatibility
- Other blood group incompatibilities

Erythrocyte Biochemical Defects

- Glucose-6-phosphate dehydrogenase deficiency
- Pyruvate kinase deficiency
- Hexokinase deficiency
- Congenital erythropoietic porphyria
- Other biochemical defects

Structural Abnormalities of Erythrocytes

- Hereditary spherocytosis
- Hereditary elliptocytosis
- Infantile pyknocytosis
- Other

Infection

- Bacterial
- Viral
- Protozoal

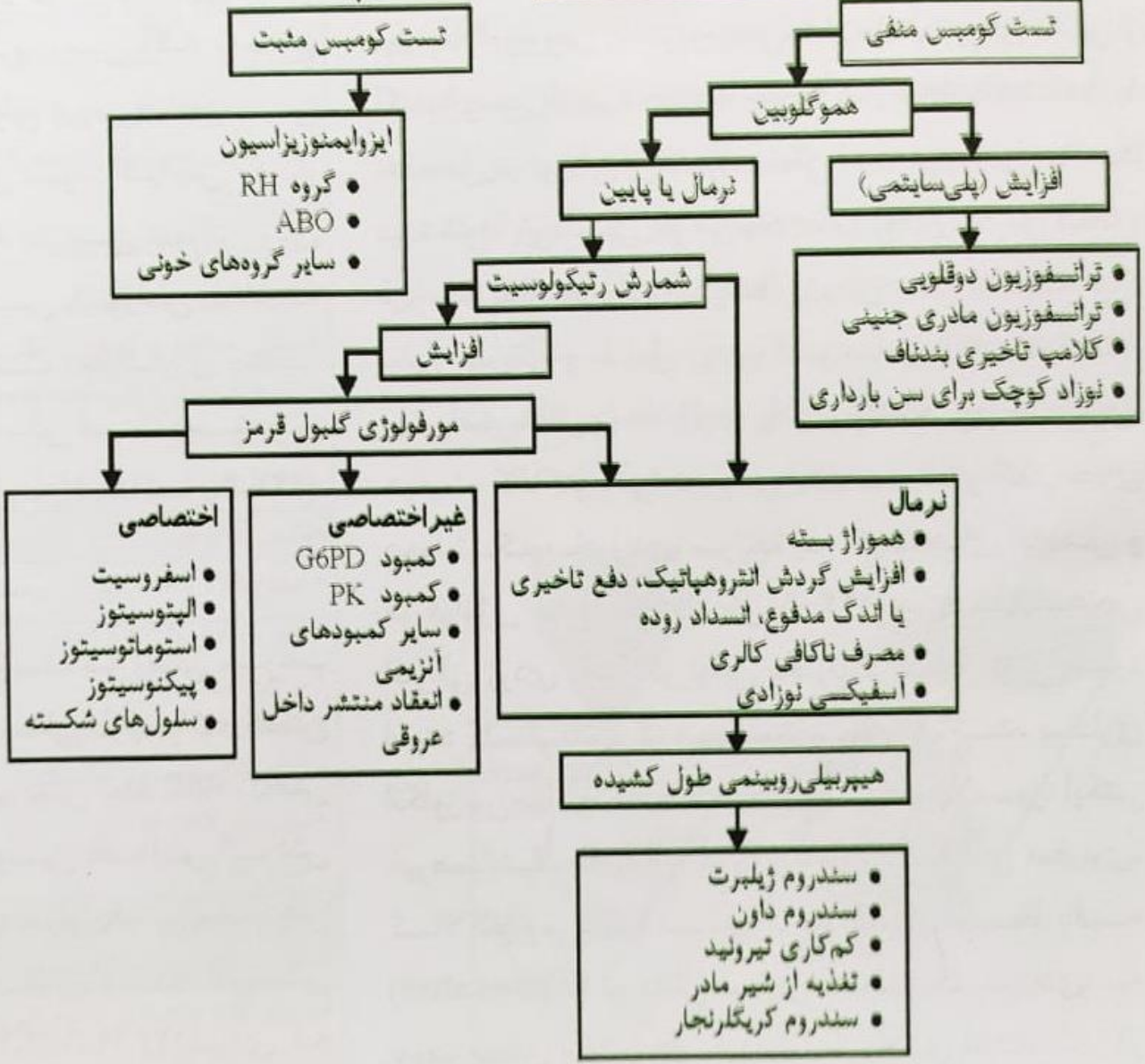
Sequestered Blood

- Subdural hematoma and cephalohematoma
- Ecchymoses
- Hemangiomas

افزایش بیلیروبین مستقیم

- سپسیس
- عفونت داخل رحمی
- توکسوپلاسموز ✓
- سایتومگالوویروس ✓
- سرخچه ✓
- هرپس ✓
- سفلیس ✓
- کاهش مجاری صفراوی
- اختلال در متابولیسم اسید صفراوی
- بیماری شدید همولیتیک
- آنرزی صفراوی
- هپاتیت سلول زانت
- کیست کولدوک
- فیبروز کیستیک
- گالاکتوزومی
- کمبود الفا ۱ آنتی تریپسین
- تیروزینمی
- کلستاز ناشی از هیپرایمنتاسیون

افزایش بیلیروبین غیر مستقیم



اختصاصی

- اسفروسیت
- الپتوسیتوز
- استوماتوسیتوز
- پیکنوسیتوز
- سلول‌های شکسته

غیر اختصاصی

- کمبود G6PD
- کمبود PK
- سایر کمبودهای آنزیمی
- انعقاد منتشر داخل عروقی

نرمال

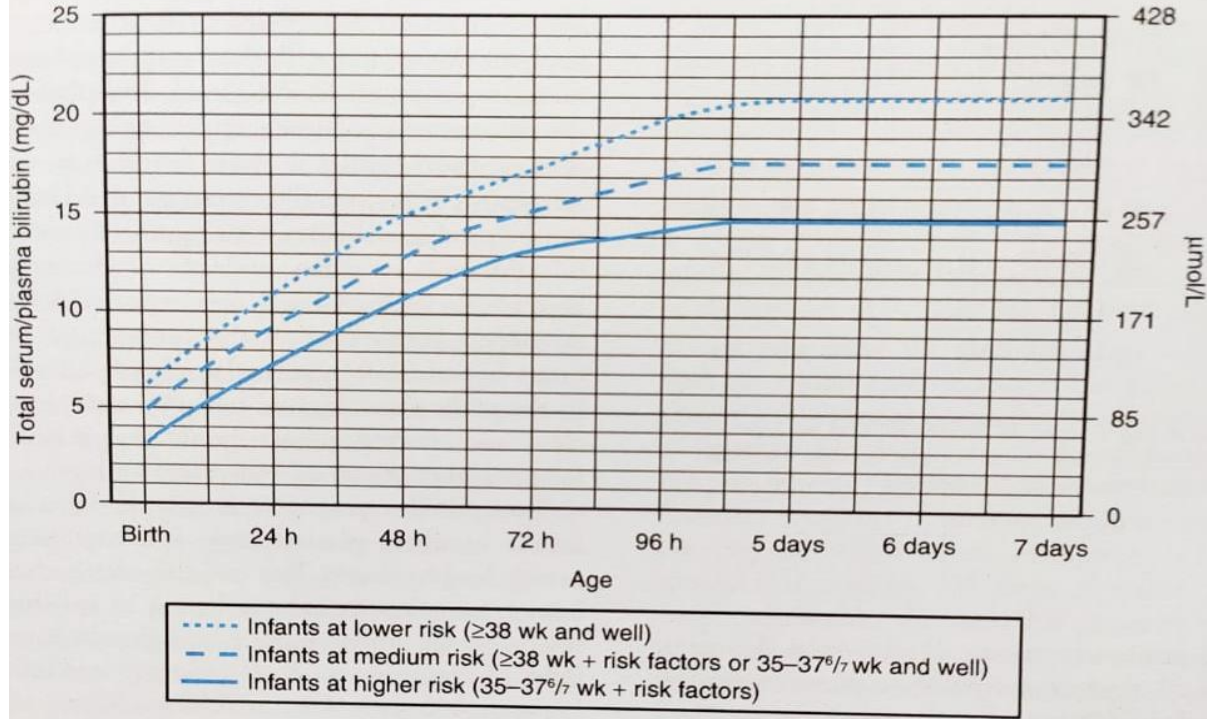
- هموراژ بسته
- افزایش گردش انتروهپاتیک، دفع تاخیری یا اندک مدفوع، انسداد روده
- مصرف ناکافی کالری
- آسفیگی نوزادی

هیپربیلیروبینمی طول کشیده

- سندروم ژیلبرت
- سندروم داون
- کم‌کاری تیروئید
- تغذیه از شیر مادر
- سندروم کریگلر-نجار

GUIDELINES FOR PHOTOTHERAPY IN HOSPITALIZED INFANTS ≥ 35 WEEKS

Note: These guidelines are based on limited evidence and the levels shown are approximations. The guidelines refer to the use of intensive phototherapy, which should be used when the TSB exceeds the line indicated for each category.



- Use total bilirubin (TB). Do not subtract direct reacting or conjugated bilirubin.
- Risk factors = isoimmune hemolytic disease, G6PD deficiency, asphyxia, significant lethargy, temperature instability, sepsis, acidosis, or albumin < 3.0 g/dL (if measured).
- For well infants $35-37\frac{6}{7}$ wk, can adjust TB levels for intervention around the medium risk line. It is an option to intervene at lower TB levels for infants closer to 35 wk and at higher TB levels for those closer to $37\frac{6}{7}$ wk.
- It is an option to provide conventional phototherapy in hospital or at home at TB levels 2–3 mg/dL ($35-50$ $\mu\text{mol/L}$) below those shown, but home phototherapy should not be used in any infant with risk factors

• **Fig. 91.22** Guidelines for phototherapy in hospitalized infants aged ≥ 35 weeks' gestation. Infants are designated as higher risk because of the potential negative effects of the conditions listed on albumin binding of bilirubin, the blood-brain barrier, and the susceptibility of the brain cells to damage by bilirubin. (Adapted from American Academy of Pediatrics Subcommittee on Hyperbilirubinemia. Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. *Pediatrics*. 2004;114:297. Used with permission of the American Academy of Pediatrics.)

TABLE 91.4 Suggested Guidelines for Initiating Phototherapy or Exchange Transfusion in Premature Infants

Gestational Age (wk)	Phototherapy TB (mg/dL) [μmol/L]	Exchange Transfusion TB (mg/dL) [μmol/L]
<28 0/7	5-6 [86-103]	11-14 [188-239]
28 0/7-29 6/7	6-8 [103-137]	12-14 [205-239]
30 0/7-31 6/7	8-10 [137-171]	13-16 [222-274]
32 0/7-33 6/7	10-12 [171-205]	15-18 [257-308]
34 0/7-34 6/7	12-14 [205-239]	17-19 [291-325]

TB, Total bilirubin.

Adapted from Maisels MJ, Watchko JF, Bhutani VK, et al. An approach to the management of hyperbilirubinemia in the preterm infant less than 35 weeks' gestation. *J Perinatol.* 2012;32:660-664.

several days of continuous exposure. It is essential, therefore, that the eyes of all newborns exposed to phototherapy be covered with sufficient layers of opaque material to guard against the possibility of damage. The use of fiberoptic phototherapy does not eliminate the need to cover an infant's eyes.

Phototherapy may produce an increase in body and

با تشکر از توجه شما