A. METHODS FOR TREATING HYPERBILIRUBINEMIA WITH STANNSOPORFIN

B. CROSS REFERENCE

[0001] This application claims the benefit of U.S. Provisional Application Serial No. 61/565,842 entitled "Methods For Treating Hyperbilirubinemia With Stannsoporfin" filed December 1, 2011 which is incorporated herein by reference in its entirety.

C. BACKGROUND

[0002] Raised bilirubin levels may lead to potentially dangerous conditions, particularly in infants. In some cases, elevated bilirubin levels result from conditions that cause an increase in bilirubin production and in others with conditions affecting removal of bilirubin. In some instances, it is a combination. Increased bilirubin levels may lead to hyperbilirubinemia which can be dangerous to a patient. Accordingly, more and different treatments for reducing bilirubin production, increasing bilirubin excretion, or both, are desirable as are other methods of treating hyperbilirubinemia or increased bilirubin production.

D. SUMMARY

[0002a] In one aspect, there is provided a use of a therapeutic amount of stannsoporfin for the manufacture of a medicament for treating hyperbilirubinemia or the symptoms thereof in an infant, wherein no exclusion factor is present and at least one of a baseline total bilirubin level is elevated above a predetermined threshold and at least one risk factor is present in said infant with hyperbilrubinemia; wherein the predetermined threshold is below the threshold for administration of phototherapy according to AAP guidelines; wherein said medicament is to be administered to said infantwherein the hyperbilirubinemia or symptoms thereof is treated.

[0003] The present disclosure further relates to methods of treating hyperbilirubinemia with a metalloporphyrin. More particularly, embodiments disclosed include methods of treating hyperbilirubinemia or the symptoms thereof in an infant.

[0004] Some embodiments are directed to methods of treating hyperbilirubinemia or the symptoms thereof in an infant, the method comprising: administering a therapeutic amount of a metalloporphyrin to the infant with hyperbilirubinemia where no exclusion factor is present and at least one of a baseline total bilirubin level is elevated above a predetermined threshold and at least one risk factor is present; wherein the hyperbilirubinemia or symptoms thereof is treated.

[0005] Some embodiments further comprise determining baseline total bilirubin levels in the infant. In some embodiments, baseline total bilirubin levels comprises total serum bilirubin levels, total cutaneous bilirubin or a combination thereof.

H. CLAIMS

What is claimed:

1. Use of a therapeutic amount of stannsoporfin for the manufacture of a medicament for ~~A method of~~ treating hyperbilirubinemia or the symptoms thereof in an infant, wherein~~the method comprising:~~

~~administering a therapeutic amount of a metalloporphyrin to the infant with hyperbilirubinemia where~~ no exclusion factor is present and at least one of a baseline total bilirubin level is elevated above a predetermined threshold and at least one risk factor is present in said infant with hyperbilrubinemia;

wherein the predetermined threshold is below the threshold for administration of phototherapy according to AAP guidelines;

wherein said medicament is to be administered to said infant~~wherein the hyperbilirubinemia or symptoms thereof is treated~~.

~~2. The method of claim 1, further comprising determining baseline total bilirubin levels in the infant.~~

~~3. The method of claim 1, wherein baseline total bilirubin levels comprises total serum bilirubin levels, total cutaneous bilirubin or a combination thereof.~~

~~4. The method of claim 1, wherein the infant is of a gestational age from about 35 to about 43 weeks.~~

~~5. The method of claim 1, wherein the infant has a minimum birth weight of about 2,500 g.~~

~~6. The method of claim 1, wherein the infant has a birth weight from about 1,700 g to about 4,000 g.~~

~~7~~2. The ~~method~~ use of claim 1, wherein the infant is Coombs positive.

3. The use of claim 1, wherein total bilirubin levels is to be determined following administration of the medicament from about 6 and to about 72 hours after administering the medicament to the infant to determine if phototherapy should be initiated based upon the AAP guidelines.

4. The use of claim 1, wherein the medicament is to be administered within 36 hours of birth of the infant.

~~8. The method of claim 1, wherein the infant is Coombs negative and at least one risk factor is present.~~

~~9~~5. The ~~method~~ use of claim ~~8~~1, wherein the at least one risk factor is selected from hemolytic disease, ABO blood type incompatibility, anti-C Rh incompatibility, anti-c Rh incompatibility, anti-D Rh incompatibility, anti-E Rh incompatibility, anti-e Rh incompatibility, G6PD deficiency and combinations thereof.

~~10. The method of claim 1, wherein determining baseline total bilirubin levels is performed at a time selected from within 6 hours of birth, 12 hours of birth, within 24 hours of birth, and within 48 hours of birth.~~

~~11. The method of claim 1, further comprising identifying the presence of at least one risk factor.~~

~~12~~6. The ~~method~~ use of claim ~~11~~1, wherein the at least one risk factor is selected from hemolytic disease, ~~ABO blood type incompatibility,~~ anti-C Rh incompatibility, anti-c Rh incompatibility, anti-D Rh incompatibility, anti-E Rh incompatibility, anti-e Rh incompatibility, and G6PD deficiency and combinations thereof.

~~13. The method of claim 1, further comprising identifying the absence of at least one exclusion factor.~~

~~14~~7. The ~~method~~ use of claim ~~16~~1, wherein the at least one exclusion factor is selected from a clinical suggestion of neonatal thyroid disease, current uncontrolled thyroid disease in the mother excluding maternal Hashimoto's, treatment or need for treatment in the infant with medications that may prolong the QT interval excluding eythromycin ointment for eye prophylaxis, a family history of Long QT syndrome, a family history of sudden infant death syndrome, known porphyrias, risk factors for porphyrias, a family history of porphyrias, a maternal history of systemic lupus erythematosus, maternal use of phenobarbital 30 days before, or after delivery, if breastfeeding, maternal current drug or alcohol abuse, maternal history of drug or alcohol abuse, an Apgar score less than or equal to 6 at age 5 minutes, congenital anomalies or infections, acidosis, sepsis, hepatitis; an excess risk of requiring surgery or exposure to operating room lights in the foreseeable future, cardiorespiratory distress defined as a respiratory rate >60 breaths per minute, a diagnosis of transient tachypnea of the newborn, abnormal auditory or ophthalmologic findings, clinically significant abnormalities on a screening laboratory evaluation, elevated direct or conjugated bilirubin (>1.0 mg/dL if the TSB is <5.0 mg/dL or >20% of the TSB if the TSB is ≥5.0 mg/dL), persistent hypoglycemia (blood glucose <40 mg/dL) despite standard-of-care treatment, liver diseases defined as ALT and/or AST greater than 2 times the upper limit of normal [ULN], abnormal renal function defined as creatinine and/or blood urea nitrogen greater than 2 times the ULN, any blood smear finding of

structural red cell abnormalities, such as spherocytosis, not caused by isoimmune hemolysis, temperature instability defined as temperature consistently (3 consecutive times) greater than 36°C and/or greater than 37.5°C axillary, use of photosensitizing drugs or agents; dehydration, defined by hypernatremia, serum sodium greater than ULN, use of intravenous immunoglobulin (IVIG) or albumins, post-delivery treatment with medications that are known or suspected to displace bilirubin from albumin (e.g., ceftriaxone or sulfa-based antibiotics), serious morbid conditions including but not limited to pulmonary disease, cardiovascular disease), exposure to any investigational medications or devices after delivery, participation in a clinical trial and combinations thereof.

~~15. The method of claim 1, wherein the predetermined threshold is the level determined by the AAP nomogram for initiating phototherapy for an infant of known age and known risk level.~~

~~16~~8. The ~~method~~ use of claim 1, wherein the predetermined threshold is selected from about 1-3 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 1 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 2 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, at the threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 1-3mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, is about 2 mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 3 mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, ~~at the threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines~~ and about 1 to about 3 mg/dL below the threshold for administration of phototherapy according to AAP nomogram corresponding to the infants age.

~~17~~9. The ~~method~~ use of claim 1, wherein the medicament is to be administer~~eding a therapeutic amount of a metalloporphyrin is performed~~ at a time selected from within about 6 hours of birth,

within about 12 hours of birth, within about 24 hours of birth and within about 48 hours of birth.

~~18. The method of claim 1, wherein the metalloporphyrin is selected from tin mesoporphyrin, zinc mesoporphyrin, chromium mesoporphyrin, tin protoporphyrin, zinc protoporphyrin, chromium protoporphyrin, bisglycol protoporphyrin and ferroporphyrin.~~

~~19. The method of claim 1, wherein the metalloporphyrin is tin mesoporphyrin.~~

10. The method of claim 1, wherein the infant is of a gestational age from about 35 to about 43 weeks.

~~20~~11. The ~~method~~ use of claim 1, wherein the therapeutic amount of the stannsoporfin ~~metalloporphyrin~~ is from about 0.75 mg/kg to about 5 mg/kg of the infant's weight.

~~21~~12. The ~~method~~ use of claim 1, wherein the therapeutic amount of the stannsoporfin ~~metalloporphyrin~~ is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg of the infant's weight.

~~22. The method of claim 1, wherein the therapeutic amount of the tin mesoporphyrin is from about 0.75 mg/kg to about 5 mg/kg of the infants weight.~~

~~23. The method of claim 1, wherein the therapeutic amount of the tin mesoporphyrin is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg of the infants weight.~~

~~24~~13. The ~~method~~ use of claim 1, wherein the ~~metalloporphyrin~~ medicament is to be administered by intramuscular injection.

~~25. The method of claim 1, wherein administering a therapeutic amount of a metalloporphyrin is performed when the infants age is less than 20 days of age.~~

~~26. The method of claim 1, wherein administering a therapeutic amount of a metalloporphyrin is performed when the infants age is less than 30 days of age.~~

~~27~~14. The ~~method~~ use of claim 1, ~~wherein~~~~further comprising administering~~ phototherapy is to be administered where total bilirubin levels following administration of the ~~metalloporphyrin~~ medicament are above the baseline total bilirubin levels.

~~28. The method of claim 1, further comprising determining post treatment total bilirubin levels following administration of the metalloporphyrin.~~

~~29. The method of claim 28, wherein determining post treatment total bilirubin levels following administration of the metalloporphyrin is performed from about 6 and to about 72 hours after administering the metalloporphyrin to the infant.~~

~~30~~15. The ~~method~~ use of claim ~~28~~1, wherein ~~post treatment~~ total bilirubin levels are at least 5% below the baseline total bilirubin levels 24 hours after ~~administering~~ administration of the medicament~~a therapeutic amount of a metalloporphyrin~~ to the infant~~.~~.

~~31. The method of claim 28,~~ wherein ~~post treatment~~ total bilirubin levels are at least 10% below the baseline total bilirubin levels 48 hours after administration of the medicament~~administering a therapeutic amount of a metalloporphyrin~~ to the infant~~.~~.

~~32. The method of claim 28,~~ or wherein post treatment total bilirubin levels are at least 20% below the baseline total bilirubin levels 72 hours after administration of the medicament~~administering a therapeutic amount of a metalloporphyrin~~ to the infant.

~~33. The method of claim 28, wherein post treatment total bilirubin levels are less than 3mg/dL above the baseline total bilirubin levels 48 hours after administering a therapeutic amount of a metalloporphyrin to the infant.~~

~~34. The method of claim 1, further comprising conducting on the infant an exam selected from a physical exam, a dermatologic exam, an audiology exam, an ophthalmological exam, a neurological exam, a laboratory test, an electrocardiogram and a combination thereof.~~

~~35. A method of reducing the likelihood of hyperbilirubinemia and the symptoms thereof in an infant, the method comprising:~~

~~administering a therapeutic amount of a metalloporphyrin to the infant where the infant's total bilirubin is determined to be increasing in at least one total bilirubin measurement compared with a baseline total bilirubin level~~

~~wherein the likelihood of hyperbilirubinemia or the symptoms thereof is decreased.~~

~~36. The method of claim 35, wherein the infant's total bilirubin is determined to be increasing in two consecutive total bilirubin measurements.~~

37. The method of claim 35, wherein the baseline total bilirubin measurement is performed from about 6 to about 96 hours of age.

38. The method of claim 35, wherein the baseline total bilirubin measurement is performed at about 6, 12, 24, 48, 72, or 96 hours of age.

39. The method of claim 35, wherein the at least one total bilirubin measurement is performed from about 6 to about 72 hours after the baseline total bilirubin measurement.

40. The method of claim 35, wherein administering a therapeutic amount of a metalloporphyrin is performed within about 1 to about 6 hours of when the infant's total bilirubin is determined to be increasing in at least one total bilirubin measurement.

41. The method of claim 35, wherein the infant has at least one risk factor selected from hemolytic disease, ABO blood type incompatibility, anti-C Rh incompatibility, anti-c Rh incompatibility, anti-D Rh incompatibility, anti-E Rh incompatibility, anti-e Rh incompatibility, G6PD deficiency and a combination thereof.

42. The method of claim 35, wherein the therapeutic amount of the metalloporphyrin is from about 0.75 mg/kg to about 5 mg/kg of the infant's weight.

43. The method of claim 35, wherein the therapeutic amount of the metalloporphyrin is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg of the infant's weight.

44. The method of claim 35, wherein the therapeutic amount of the stannsoporfin is from about 0.75 mg/kg to about 5 mg/kg of the infant's weight.

45. The method of claim 35, wherein the therapeutic amount of the stannsoporfin is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg of the infant's weight.

46. A method of treating hyperbilirubinemia and the symptoms thereof in an infant, the method comprising:

administering a therapeutic amount of a metalloporphyrin to the infant; and

administering a therapeutic amount of phototherapy to the infant

wherein the hyperbilirubinemia or symptoms thereof is treated.

47. The method of claim 46, further comprising determining baseline total bilirubin levels.

48. The method of claim 47, wherein determining baseline total bilirubin levels is performed within 48 hours of birth.

49. The method of claim 46, further comprising identifying the presence of at least one risk factor prior to administering a therapeutic amount of the metalloporphyrin to the infant.

50. The method of claim 49, wherein the at least one risk factor is selected from hemolytic disease, ABO blood type incompatibility, anti-C Rh incompatibility, anti-c Rh incompatibility, anti-D Rh incompatibility, anti-E Rh incompatibility, anti-e Rh incompatibility, G6PD deficiency and a combination thereof.

51. The method of claim 46, further comprising identifying the presence of at least one exclusion factor prior to administering a therapeutic amount of the metalloporphyrin to the infant.

52. The method of claim 51, wherein the at least one exclusion factor is selected from a clinical suggestion of neonatal thyroid disease, current uncontrolled thyroid disease in the mother excluding maternal Hashimoto's, treatment or need for treatment in the infant with medications that may prolong the QT interval excluding erythromycin ointment for eye prophylaxis, a family history of Long QT syndrome, a family history of sudden infant death syndrome, known porphyrias, risk factors for porphyrias, a family history of porphyrias, a maternal history of systemic lupus erythematosus, maternal use of phenobarbital 30 days before, or after delivery, if breastfeeding, maternal current drug or alcohol abuse, maternal history of drug or alcohol abuse, an Apgar score less than or equal to 6 at age 5 minutes, congenital anomalies or infections, acidosis, sepsis, hepatitis; an excess risk of requiring surgery or exposure to operating room lights in the foreseeable future, cardiorespiratory distress defined as a respiratory rate >60 breaths per minute, a diagnosis of transient tachypnea of the newborn, abnormal auditory or ophthalmologic findings, clinically significant abnormalities on a screening laboratory evaluation, elevated direct or conjugated

~~bilirubin (>1.0 mg/dL if the TSB is <5.0 mg/dL or >20% of the TSB if the TSB is ≥5.0 mg/dL), persistent hypoglycemia (blood glucose <40 mg/dL) despite standard of care treatment, liver diseases defined as ALT and/or AST greater than 2 times the upper limit of normal [ULN], abnormal renal function defined as creatinine and/or blood urea nitrogen greater than 2 times the ULN, any blood smear finding of structural red cell abnormalities, such as spherocytosis, not caused by isoimmune hemolysis, temperature instability defined as temperature consistently (3 consecutive times) greater than 36°C and/or greater than 37.5°C axillary, use of photosensitizing drugs or agents; dehydration, defined by hypernatremia, serum sodium greater than ULN, use of intravenous immunoglobulin (IVIG) or albumins, post-delivery treatment with medications that are known or suspected to displace bilirubin from albumin (e.g., ceftriaxone or sulfa-based antibiotics), serious morbid conditions including but not limited to pulmonary disease, cardiovascular disease), exposure to any investigational medications or devices after delivery, participation in a clinical trial and combinations thereof.~~

~~53. The method of claim 46, wherein administering a therapeutic amount of a metalloporphyrin and administering a therapeutic amount of phototherapy is performed where no exclusion factor is present.~~

~~54. The method of claim 46, wherein administering a therapeutic amount of a metalloporphyrin and administering a therapeutic amount of phototherapy is performed where at least one of a baseline total bilirubin level elevated above a predetermined threshold and at least one risk factor, or a combination thereof is present.~~

~~55. The method of claim 54, wherein the predetermined threshold is selected from about 1-3 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 1 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 2 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, at the threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 1-3mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 2 mg/dL~~

~~below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 3 mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, at the threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, and about 1 to about 3 mg/dL below the threshold for administration of phototherapy according to AAP nomogram corresponding to the infants age.~~

~~56. The method of claim 46, wherein the therapeutic amount of the metalloporphyrin is from about 0.75 mg/kg to about 5 mg/kg of the infant's weight.~~

~~57. The method of claim 46, wherein the therapeutic amount of the metalloporphyrin is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg of the infant's weight.~~

~~58. The method of claim 46, wherein the therapeutic amount of the stannsoporfin is from about 0.75 mg/kg to about 5 mg/kg of the infant's weight.~~

~~59. The method of claim 46, wherein the therapeutic amount of the stannsoporfin is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg of the infant's weight.~~

~~60. The method of claim 46, wherein administering a therapeutic amount of a metalloporphyrin is performed in the infant is performed when the infants age is less than about 48 hours.~~

~~61. The method of claim 46, wherein administering a therapeutic amount of a metalloporphyrin is performed in the infant is performed when the infants age is less than about 20 days of age.~~

~~62. The method of claim 46, wherein administering a therapeutic amount of a metalloporphyrin is performed in the infant is performed when the infants age is less than about 30 days of age.~~

~~63. The method of claim 46, wherein administering a therapeutic amount of a metalloporphyrin and phototherapy is performed simultaneously.~~

~~64. The method of claim 46, wherein phototherapy is performed at a time selected from within about 12 hours of administration of therapeutic amount of a metalloporphyrin~~

and within about 24 hours of administration of therapeutic amount of a metalloporphyrin.

65. The method of claim 46, further comprising conducting on the infant, a physical exam selected from, a dermatologic exam, an audiology exam, an ophthalmological exam, a neurological exam, a laboratory test, an electrocardiogram and a combination thereof.

66. A method of reducing the risk of hyperbilirubinemia and the symptoms thereof in an infant, the method comprising

administering a therapeutic amount of a metalloporphyrin to the infant wherein the infant has at least one risk factor associated with hyperbilirubinemia.

67. The method of claim 66, wherein the infant has a total bilirubin level of less than about 3 mg/dL below the threshold for administration of phototherapy according to AAP nomogram corresponding to the infants age.

68. The method of claim 66, wherein administering a therapeutic amount of a metalloporphyrin to the infant comprises administering a single dose of a metalloporphyrin.

69. The method of claim 66, wherein the least one risk factor is selected from hemolytic disease, ABO blood type incompatibility, anti-C Rh incompatibility, anti-c Rh incompatibility, anti-D Rh incompatibility, anti-E Rh incompatibility, anti-e Rh incompatibility, G6PD deficiency and a combination thereof.

70. The method of claim 66, wherein the risk factor is a total bilirubin level at or above a pre-determined threshold.

71. The method of claim 70, wherein the predetermined threshold is selected from about 1-3 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 1 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 2 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, is at the threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP

guidelines, about 1-3mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 1-3mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 2 mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 3 mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, at the threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 1 to about 3 mg/dL below the threshold for administration of phototherapy according to AAP nomogram corresponding to the infants age and at the threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines.

72. The method of claim 66, wherein administering a therapeutic amount of the metalloporphyrin to the infant results in at least one of a decrease in total bilirubin levels compared with total bilirubin levels prior to administering the metalloporphyrin and no detectable increase in total bilirubin levels compared with total bilirubin levels prior to administering the metalloporphyrin.

73. The method of claim 66, wherein the therapeutic amount of the metalloporphyrin is from about 0.75 mg/kg to about 5 mg/kg of infant's weight.

74. The method of claim 66, wherein the therapeutic amount of the metalloporphyrin is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg of infant's weight.

75. The method of claim 66, wherein the therapeutic amount of the stannsoporfin is from about 0.75 mg/kg to about 5 mg/kg of infant's weight.

76. The method of claim 66, wherein the therapeutic amount of the stannsoporfin is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg of infant's weight.

77. A method of stabilizing bilirubin levels in an infant, the method comprising:

obtaining a baseline total bilirubin level measurement; and

administering a therapeutic amount of a metalloporphyrin to the infant wherein the infant has at least one of hyperbilirubinemia, bilirubin levels above a pre-determined threshold, rising bilirubin levels, and a combination thereof

wherein bilirubin levels in the infant are stabilized.

78. The method of claim 77, wherein administering a therapeutic amount of a metalloporphyrin to the infant comprises administering a single dose of a metalloporphyrin.

79. The method of claim 77, wherein the infant has at least one risk factor selected from hemolytic disease, ABO blood type incompatibility, anti-C Rh incompatibility, anti-c Rh incompatibility, anti-D Rh incompatibility, anti-E Rh incompatibility, anti-e Rh incompatibility, G6PD deficiency and a combination thereof.

80. The method of claim 77, wherein the infant is of a gestational age from about 35 to about 43 weeks.

81. The method of claim 77, wherein the infant has a minimum birth weight of about 2500 g.

82. The method of claim 77, wherein the infant has a birth weight from about 1,700 g to about 4,000 g.

83. The method of claim 77, wherein stabilization of total bilirubin levels is achieved when at least two total bilirubin level measurements taken at pre-determined time points after administration of a single therapeutic amount of a metalloporphyrin indicate a total bilirubin level at or below the baseline total bilirubin level.

84. The method of claim 77, wherein the predetermined threshold is about 1-3 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 1 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 2 mg/dL below a threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, is at the threshold for administration of phototherapy to an infant up to about 12 hours of age per the AAP guidelines, about 1-3mg/dL below a threshold for administration of phototherapy to

an infant from about 12 to 48 hours of age per the AAP guidelines, about 1-3mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 2 mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 3 mg/dL below a threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, at the threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines, about 1 to about 3 mg/dL below the threshold for administration of phototherapy according to AAP nomogram corresponding to the infants age and at the threshold for administration of phototherapy to an infant from about 12 to 48 hours of age per the AAP guidelines.

85. The method of claim 77, wherein the therapeutic amount of the metalloporphyrin is from about 0.75 mg/kg to about 5 mg/kg.

86. The method of claim 77, wherein the therapeutic amount of the metalloporphyrin is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg.

87. The method of claim 77, wherein the therapeutic amount of the stannsoporfin is from about 0.75 mg/kg to about 5 mg/kg.

88. The method of claim 77, wherein the therapeutic amount of the stannsoporfin is selected from 0.75 mg/kg, 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg.

89. A method for treating rising bilirubin levels comprising:

establishing a baseline bilirubin level in a patient at risk for hyperbilirubinemia at a predetermined age;

administering to the patient a therapeutic amount of stannsoporfin after the baseline is established.

90. The method of claim 89, wherein the predetermined age is about 6 hours, about 12 hours, or about 24 hours from birth.

91. The method of claim 89, wherein a baseline reading at the AAP nomogram threshold for administering phototherapy or up to 3.0mg/dL below the AAP nomogram threshold for administering phototherapy indicates treatment is required.

92. A method of treating hyperbilirubinemia comprising:

administering a therapeutic amount of stannsoporfin to a patient in need thereof to achieve a Cmax of at least 5000ng/mL.

93. The method of claim 92, wherein the therapeutic amount of stannsoporfin is 1.5mg/kg and achieves a Cmax of about 6450 ng/mL.

94. The method of claim 92, wherein the therapeutic amount of stannsoporfin is 3.0 mg/kg and achieves a Cmax of about 11500 ng/mL.

95. The method of claim 92, wherein the therapeutic amount of stannsoporfin is 4.5 mg/kg and achieves a Cmax of about 20400 ng/mL.

96. The method of claim 92, wherein Cmax is achieved at a Tmax of about 1.5 hours to about 2.5 hours.