


KJ-8000

Transcutaneous Jaundice Meter

Pay Attention to Project of Healthy Pregnancy and Scientific Nurture

Technical Specifications:

Detection method	light reflection, comparison of blue and green lights.
Display	Large screen three-digit LCD. It will warn and clear automatically if there are wrong data. The unit can be switched between mg/dl and umol/l.
Light source	Xenon flash lamp
Battery	3.7 V rechargeable batteries
Fast charging	three hours
Measuring times	500 times at least after charging
Calibration function	auto calibration
Calibration board	Display 00.0 or 00.1 for "00" Display 20.0 ± 1 for "20"
Error	± 1 at 0-15, ± 1.5 at 16-25
Accuracy	≤ 6% preset value
Continuously variable	≤ 3%
Prompt function	The "  "symbol will be displayed to prompt you that the batteries need to be charged when the battery voltage is lower than 3.6 V.
Average measurement function:	set 2-5 times average measurement Patent design of streamline appearance
Dimensions:	182 × 57 × 31
Weight:-	350g



Xuzhou Kejian Hi-tech Co.,Ltd

Add: CUMT Science Park, Xuzhou, Jiangsu, China

Tel: 86-516-83897618 Fax: 86-516-83897757

M.P.: 86-15852172210

E-mail: sales@kejianmed.com arisa.g@163.com

Http://www.kejianmed.com

Skype: arisa1980



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Introduction

Hyperbilirubinemia is a common condition in newborn infants and may cause kernicterus if not properly managed. Therefore, jaundice in the newborn should be dynamically observed so as to diagnose and treat timely. However, repeated blood sampling for measuring serum bilirubin is painful and is a cause for distress to the infant, increases the workload of the nursery staff, and not readily accepted by parents. KJ-8000 transcutaneous jaundice meter is first produced in China. It utilizes fiber, photoelectric, electronic and information processing technologies. It is small and light. You just press the probe lightly on the forehead of the baby and the bilirubin concentration in the skin tissue is immediately displayed on the LCD screen.

Application Scope

KJ-8000 transcutaneous jaundice meter is widely used in newborn nursery, newborn outpatient clinic, newborn intensive care unit (NICU), children health care department, etc.

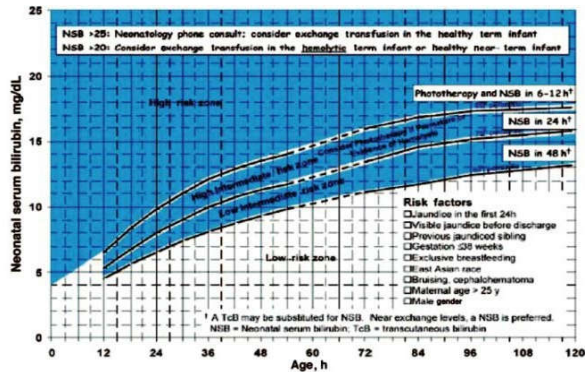
Diagnostic Criteria of Pathological Jaundice

(For reference only. Specific diagnoses is made by doctors according to clinical conditions)

Pathological jaundice occurs in term infants if serum bilirubin concentration at 24 hours after birth is higher than 6mg/dl, serum bilirubin concentration at 24-48 hours is higher than 9mg/dl, serum bilirubin concentration at more than 48 hours is higher than 12.9mg/dl. Jaundice is more serious at lower bilirubin levels in preterm infants. Serum conjugated bilirubin concentration is higher than 34umol/l (2mg/dl).

Serum bilirubin increases more than 85umol/l (5mg/dl) every day. Jaundice duration is long, more than 2-4 weeks, or becomes more serious.

Occurs late but is incurable, or rises again after regression.



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The gold standard for measuring bilirubin is high performance liquid chromatography (HPLC). However, it requires expensive equipment and is available in a few centers. According to a study by the University of Michigan in the USA, transcutaneous bilirubin (TcB) has similar, if not better, sensitivity and specificity as total serum bilirubin (TSB) when compared to HPLC¹.

Because most newborn babies are being discharged early, jaundice may not appear until they are at home. For this reason, many hospitals in developed countries have adopted TcB as a routine measurement prior to discharge from the newborn nursery and plotting the result on the bilirubin nomogram. Such practice has saved many babies from complications of hyperbilirubinemia. Researchers at the University of Pennsylvania in the US, following adopting routine pre-discharge TcB, concluded: "Our data demonstrate the accuracy and reproducibility of the pre-discharge TcB measurements in term and near-term newborn infants of diverse races and ethnicities. Infants with pre-discharge TcB values above the 75th percentile of hour-specific TSB values on the bilirubin nomogram may be considered to be at high risk for subsequent excessive Hyperbilirubinemia²."

A similar study at the University of Florence Medical School in Italy had a similar conclusion: "Transcutaneous bilirubin detector" could be used not only as a screening device but also as a reliable substitute of total serum bilirubin (TSB) determination. At higher levels of TSB, in which phototherapy and/or exchange transfusion might be considered, TcB performed slightly better than the laboratory³."

Measurement of bilirubin with "transcutaneous technique" is rapid and simple, and it is easy to perform repeated measurements over time, thus reducing the likelihood of error. TcB measurements with the jaundice meter should obviate the need for most serum bilirubin levels in newborn infants > or =35 weeks of gestation, although serum bilirubin measurements are still required when treatment with phototherapy or exchange transfusion is being considered⁴."

A French study also concluded that transcutaneous bilirubin (TcB) "may be used to monitor bilirubin in term neonates at 48 hours of life even with a weight loss. Clinicians have however to be conscious of the limit of the precision of the measures both for the TcB and the laboratory methods (TSB)⁵."

References:

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2. Bhutani VK, et al. Noninvasive measurement of total serum bilirubin in a multiracial pre-discharge newborn population to assess the risk of severe hyperbilirubinemia. Pediatrics. 2000 Aug;106(2):E17
3. Rubaltelli FF, et al. Transcutaneous bilirubin measurement: a multicenter evaluation of a new device. Pediatrics. 2001 Jun;107(6):1264-71
4. Maisels MJ, et al. Evaluation of a new transcutaneous bilirubinometer. Pediatrics. 2004 Jun;113(6):1628-35
5. Carceller A-M, et al. Annales de Biologie Clinique. Volume 64, Number 6, 575-9, Nov-Dec 2006.