UK National Screening Committee

14/404

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Screening for Kernicterus in Newborns

15 June 2016

Aim

1. To ask the UK National Screening Committee (UK NSC) to make a recommendation, based upon the evidence presented in this document, on whether screening for Kernicterus in newborns meets the UK NSC criteria for the introduction of a population screening programme.

   This document provides background on screening for Kernicterus in newborns.

Current recommendation and background

2. The current recommendation, based on a review in 2011, is that a systematic population screening programme for Kernicterus screening in newborns is not recommended.

3. The 2011 review highlighted a number of key uncertainties:

   a. While hyperbilirubinaemia is a risk factor for kernicterus, there is no clear cut-off bilirubin level that accurately identifies those who will progress to kernicterus. Cases of kernicterus have been observed across a range of bilirubin concentrations.

   b. NICE recommendations to monitor all newborns for signs of jaundice in the first 72 hours after birth (particularly the first 24 hours) and clear treatment algorithms for phototherapy and exchange transfusion were expected to give good coverage of at-risk infants. This would provide the potential for early treatment and reduction in the number who will develop significant hyperbilirubinaemia.

   c. There was uncertainty on whether current bilirubin-lowering treatments would prevent kernicterus.

d. Pre-discharge risk assessment is not currently recommended by NICE. This was highlighted as an area for further research as significant hyperbilirubinaemia may develop at home within the first week of life.

Current review

4. This condition is being reviewed as part of the UK NSC's three year review cycle. The review was undertaken by Bazian Ltd

5. The review focuses on:

    a. whether the understanding of the epidemiology, natural history and disease markers have improved sufficiently to identify a screening test for preventing kernicterus

    b. the effectiveness of existing or new treatments in preventing hyperbilirubinaemia developing into Kernicterus

    c. whether current clinical management has been optimised

6. The conclusion of this current review is that universal screening for kernicterus in newborns should not be recommended. The key findings to support the conclusion are:

    a. There is no established bilirubin threshold associated with development of kernicterus. This means it would be difficult to know what level of bilirubin puts the baby at high risk of kernicterus. **Criterion 5 not met**

    b. Current medical practice needs to be optimised before screening is recommended. There is limited evidence to understand whether this is currently the case. **Criteria 10 and 12 not met**

    c. There is no evidence that national screening could identify those at risk of developing kernicterus. **Criterion 13 not met**

Consultation

7. A three month consultation was hosted on the UK NSC website between February and May 2016. 6 stakeholder organisations were contacted directly. **Annex A**

8. One response was received from the Royal College of Paediatrics and Child Health, which was supportive of the review conclusions that universal screening should not be offered. **Annex B**

Recommendation

9. The committee is asked to approve the following recommendation:

   Universal screening for Kernicterus in newborns is not recommended

This is because there is no evidence that a national, universal screening strategy based on bilirubin levels could accurately predict babies at higher risk of developing Kernicterus

Based upon the 22 UK NSC criteria to recommend a population screening programme, screening for Kernicterus in newborns did not meet the following primary requisites:

	Criteria	Met / Not met
	The Test	
5	There should be a simple, safe, precise and validated screening test.	Not met ✗
	The Treatment	
10	There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment.	Not met ✗
	The Screening Programme	
12	Clinical management of the condition and patient outcomes should be optimised in all health care providers prior to participation in a screening programme.	Not met ✗

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Annex A

List of organisations contacted:

1. Association for Improvements in the Maternity Services
2. Association of British Neurologists
3. BLISS
4. The British Society for Haematology
5. British Society for Haematology Transfusion Taskforce
6. British Association of Perinatal Medicine
7. The Ear Foundation
8. Royal College of Midwives
9. Royal College of Paediatrics and Child Health
10. Royal College of Pathologists
11. Signature

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Annex B

Consultation Comments

Name:	Comments provided on behalf of the following: • Dr Ramon Fernandez	**Email address:**	**xxxx xxxx**
Organisation (if appropriate):	Royal College of Paediatrics and Child Health		
Role:	**NA**		
Do you consent to your name being published on the UK NSC website alongside your response? **Yes** ☒ **No** ☐			

Section and / or page number	**Text or issue to which comments relate**	
General	We agree with the recommendations.	