British Association of Perinatal Medicine and Neonatal Society

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AUDIT TO EVALUATE CLINICAL PRACTICE VARIATION IN THE MANAGEMENT OF NEWBORNS WITH POSITIVE DIRECT ANTIGLOBULIN TEST (DAT)

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Background Haemolytic Disease of Newborn (HDN) caused by Rhesus or ABO incompatibility can cause severe haemolysis, jaundice and anaemia in infants. The direct antiglobulin test (DAT) is the test of choice in this clinical context. However, most infants with positive DAT are asymptomatic, while some may present with jaundice with or without anaemia. Subsequent neonatal anaemia may be either of early (<1 week postnatally) or late onset (≥2 weeks postnatally).

Folic acid supplementation in neonates with a positive DAT may reduce the incidence of late onset anaemia. Before considering managing infants with positive DAT, it is important to consider the low sensitivity and specificity of the test. Therefore, both clinical features and laboratory results should be used to diagnose HDN.

Objectives To audit our current practice in the management of DAT positive infants to support/refute presence of unwarranted variation.

Methods Retrospective review of the clinical profile of all infants who had a positive DAT result over a 1 year period (2019).

Results 43 infants had positive DAT results in the study period. 17 (40%) were asymptomatic, 21 (49%) had mild jaundice with no anaemia and 5 (11%) had haemolytic disease of newborn (HDN).

There was unwarranted variation in folic acid treatment initiation, duration of therapy and follow up. These were not necessarily based on the clinical symptoms or risk of anaemia.

Of those asymptomatic (N=17), 13 were DAT+ (3 received treatment up to 3mo and follow-up). 3 were DAT 2+ and 1 had DAT 4+ (0 received either treatment or follow-up).

Of those with mild jaundice (N=21), 17 had DAT+ (12 received treatment for 6w-4mo and follow-up; 5 did not receive treatment or follow-up). 2 had DAT 2+ (both received treatment, 6w-3mo and follow-up). 1 had DAT 3+ and 1 had DAT 4+ (both received 3mo treatment and follow-up).

Of those with HDN (N=5), 2 had DAT 2+ (1 did not receive treatment and 1 had no clear documentation on whether treatment/follow-up offered), 2 had DAT 3+ and 1 had DAT 4+ (all received 4w treatment and were offered follow-up).

Conclusions Our audit showed unwarranted variation in the management of newborns with DAT positive results. Folic acid prescriptions had no relationship to clinical symptomatology or DAT severity and the duration of treatment/follow up (6 week to 3 months) was inconsistent. Any potential benefit was offset by significant increases in healthcare costs and adverse patient experience.

Our audit highlighted a clear and unwarranted variation. DAT should only be requested where there is a high index of clinical suspicion and if positive, folic acid therapy and monitoring for late-onset anaemia should be reserved for those select groups. A new guideline is being developed to standardise management of DAT positive infants.

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CAN WE PREDICT ASTHMA? STUDY OF ENVIRONMENTAL FACTORS IN RELATION TO API (ASTHMA PREDICTIVE INDEX) IN WHEEZY INFANTS

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Background Diagnosing asthma in preschool children is very challenging. Several tests can support asthma diagnosis such as spirometry, bronchoprovocation, and sputum induction. However, these tests are very difficult to perform with preschool children.

API (Asthma predictive index) is simple clinical validated test that is widely used in our daily clinical practice to predict the outcome of infancy's wheezes. It assess parental atopic disease as well as infant's atopies. Few environmental factors were included in this index.

Objectives In this study we tried to assess the effect of different environmental factors among Egyptian wheezy infants compared to their clinical criteria and their API.

Methods This is a cross-sectional study that included fifty wheezy infants and thirty healthy controls of matched age and sex. Different environmental factors were included in this study including: sex, residency, feeding history, exposure to smoke, cigarette and animals. The clinical characteristics of wheezes were assessed. Also, serum levels of vitamin D, Calcium and Phosphorus were measured in all patients. Correlation analysis was used to evaluate the relationship between homogeneously distributed variables

Results BMI was found to be significantly higher in wheezy infants compared to controls as well as API (+ve) group compared to API (-ve) group ($P < 0.001$ in both). Exposure to carpets was found statistically higher in API (+ve) group compared to API (-ve) group ($P: 0.048$). Among the laboratory criteria, vitamin D was found to be significantly lower in wheezy infants compared to controls as well as API (+ve) group compared to API (-ve) group (P value : 0.01 in both). Negative correlation was found between number of wheezing attacks and serum vitamin D ($R: -0.356$, $P: 0.011$).

Sex, residency, maternal exposure to smoke, exclusive breast feeding in the first 6 months of life, duration of outdoor exposure and exposure to different environmental factors (mold, pollen animals) were not found to be statistically significant in all study's groups.

Conclusions BMI, Exposure to carpets, vitamin D levels were found to be related to API (and consequently the number of wheezing attacks) status in different wheezy infants. We might consider including these criteria as predictive criteria for the outcome of childhood wheezes.