Going Solar is Good but Caution Needed!

We read with interest the recent article exploring augmentation of vitamin D levels in predominantly breastfed infants the natural way – that is exposure to sunlight [1]. In the accompanying editorial in the same issue, cost of medicinal way of augmentation is put forth as a justification for exploring the solar option [2]. We have following comments:

1. How neutrality was maintained while requiring the mothers to maintain sun exposure charts. At the study end point, only 10% of infants were vitamin D sufficient. Were 90% of the infants with insufficient vitamin D status given vitamin D supplementation at the end of study period till 1 year?
2. Aapart from sun exposure, maternal vitamin D level at enrolment was a significant predictor of infant vitamin D statusin this study. Antenatal calcium supplements, which 93% of these mothers received, obviously did not have any effect, and thus it is vitamin D supplementation that matters.
3. The sun exposure details of the study group mothers is not given. It will be interesting to find why 90% of them were vitamin D deficient (whether it is despite reasonable sun exposure).

Why not treat the mother-infant dyad, rather than infant alone, as achieving vitamin D sufficiency is equally important for the mothers. Compliance with daily oral vitamin D supplementation of infants is documented to be very poor even in the West [4,5]. Exposing infants to sunlight may be a more difficult proposition than medicinal supplements. While the natural way of augmenting the vitamin D levels can be studied, the logistics and safety of such an approach has to be established firmly before disbanding the currently recommended regimen of daily 400IU Vitamin D to infants of predominantly breastfed infants.

***G KARTHIKEYAN AND #GK MONISH**
Department of Pediatrics, Karuna Medical College, Palakkad and
#Coimbatore Medical College, Coimbatore; India.
**drgkarthikeyan@yahoo.co.uk*

REFERENCES

1. Meena P, Dabas A, Shah D, Malhotra RK, Madhu SV, Gupta P. Sunlight exposure and vitamin D status in breastfed infants. Indian Pediatr. 2017;54:105-11.
2. Goswamy R, Sachdev HPS. Vitamin D sufficiency through sunshine in infants? Indian Pediatr. 2017;54:103-4.
3. Shaw NJ, Mughal MZ. Vitamin D and child health: Part 1. Arch Dis Child. 2013; 98:363-7.
4. Perrina CG, Sharma AJ, Jefferds ME, Serdula MK, Scanlon KS. Adherence to vitamin D recommendations among US infants. Pediatrics. 2010;125:627-32.
5. Millette M, Sharma A, Weiler H, Sheehy O, Berard A, Rodd C. Program to provide Quebec infants with free vitamin D supplements failed to encourage participation or adherence. Acta Pediatr. 2014;103:444-9.

AUTHORS' REPLY

We thank the authors for their critical appraisal of our work.

1. The mothers were instructed to chart the sun exposure on the given performa. No additional instructions or information was provided, which could have limited or promoted sun exposure. We did not find any positive influence of this exercise on their sun-exposure behavior as serially collected data did not show any mean increase in sun exposure with study duration. The children who were found vitamin D deficient were supplemented with vitamin D at 400 IU per day to be given till 12 months of age.
2. The antenatal calcium supplements being received by the mothers contained only calcium salt without vitamin D. The global consensus for prevention of nutritional rickets recommends daily supplemental maternal intake of 600 IU vitamin D [2]. It may be worthwhile to evaluate maternal vitamin D supplementation strategies to prevent rickets in infants and improve maternal bone health.
3. The maternal sun exposure details were not collected, and hence cannot be commented upon. The factors associated with high rate of vitamin D deficiency in a sunlight rich country like India definitely require further evaluation.

We agree with the authors that treatment or supplementation of mother would be a more practical, feasible and healthier solution as it would improve the vitamin D status of both mother and child [2]. Routine vitamin D supplementation of infants till 12 months is seldom practiced in Indian settings, and therefore may not be a practical solution, as highlighted by the authors.

However, more robust experimental studies are needed to support the early findings obtained from our study before we recommend replacing supplemental vitamin D with sunlight exposure during infancy.

Additional comment: There has been a misinterpretation of our study in the accompanying editorial [3]. Authors have commented "The authors advised mothers to expose their newborns to sunshine for a duration of six months, when the association between duration and timing of the sunshine exposure and serum 25(OH)D was analyzed." [3]. Our study was purely an observational study, and no advice regarding sun exposure was given during the study.

AASHIMA DABAS AND
***PIYUSH GUPTA**
prof.piyush.gupta@gmail.com

REFERENCES

1. Meena P, Dabas A, Shah D, Malhotra RK, Madhu SV, Gupta P. Sunlight exposure and vitamin D status in breastfed infants. Indian Pediatr. 2017;54:105-11.
2. Munns CG, Shaw N, Kiely M, Specker BL, Thacher TD, Ozono K, *et al*. Global Consensus Recommendations on prevention and management of nutritional rickets. Horm Res Paediatr. 2016;85:83-106.
3. Goswami R, Sachdev HPS. Vitamin D sufficiency through sunshine in infants? Indian Pediatr. 2017;54:103-4.

Congenital Junctional Ectopic Tachycardia in a Neonate

Congenital Junctional ectopic tachycardia (JET) is a rare and usually incessant tachyarrhythmia that presents in the first few months of life. In the past, treatment of congenital JET was difficult, and the condition was associated with a high mortality [1]. However, with the evolution of amiodarone as the first line of pharmacological management, the outlook for infants with this disorder has improved [2]. We report a neonate with congenital JET who had an incessant arrhythmia, and was managed on a combination of amiadarone and propranolol.

A late pre-term (34 weeks 6 days) baby was delivered *via* emergency cesarean section. A routine antenatal scan had documented a heart rate of 210/minute and fetal ascites. The liquor volume was normal. Clinical examination of the infant showed a pulse rate of 210/min with good peripheral pulses and normal peripheral perfusion. The respiratory system examination, cardiac examination and abdomen were normal. Echocardiogram revealed a structurally normal heart except for a persistent small atrial communication shunting left to right. The ventricular contractility was preserved on subjective assessment.

The electrocardiogram (ECG) showed a narrow complex regular tachycardia with a heart rate of 200/minute (***Fig.* 1**). There was evidence of atrio-ventricular (A-V) disassociation with an atrial rate of 150/minute. A diagnosis of congenital JET was made and the baby was started on propranolol at a dose of 1 mg/kg/dose four times a day. There was no suppression of tachycardia in 48 hours although the baby remained hemodynamically stable. Hence amiodarone was added at a dose of 10 mg/kg/day followed by a maintenance dose of 5 mg/kg/day. After 4 days of treatment, a satisfactory rate control with reduction of the junctional rate to approximately 120/minute was achieved and the child was discharged on the combination of amiodarone and propranolol.

Congenital JET is a rare neonatal arrhythmia that was first reported by Coumel, *et al.* [3]. It is caused by abnormal automaticity of the A-V node. The ECG typically manifests as a narrow-complex tachycardia with evidence of A-V disassociation or 1:1 retrograde V-A condition. JET with onset in the first few weeks of life is more likely to be incessant or sustained (>50% of QRS complexes) with a high risk of congestive cardiac failure [1,2,4]. Most children require a combination of anti-arrhythmic medications, with amiodarone the most commonly used [2]. Complete or partial control of

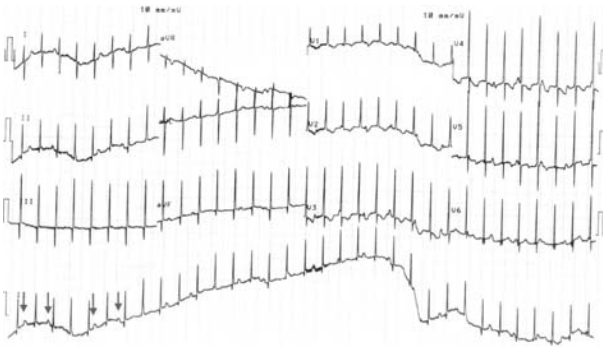

FIG. 1 *ECG showing a regular narrow complex tachycardia with a heart rate of 200/minute and evidence of A-V dissociation. The arrows denote p waves which do not have a consistent relationship with the QRS complexes.*