

**TABLE I** ORGANISM FROM BLOOD CULTURE IN PEDIATRIC SEPSIS AND THEIR RESISTANCE PATTERN

| Organism                                 | No (%)     | Resistance pattern                                       |
|--|------------|--|
| <i>Staphylococcus aureus</i>             | 459 (44.8) | 283/444 (63.7%) methicillin                              |
| Coagulase-negative <i>Staphylococcus</i> | 254 (24.8) | 168/234 (71.8%) methicillin                              |
| <i>Enterococcus</i> species              | 73 (7.1)   | 19/70 (27.1%) vancomycin                                 |
| <i>Escherichia coli</i>                  | 47 (4.6)   | 14/42 (33.3%) 3 <sup>rd</sup> generation cephalosporines |
| <i>Acinetobacter</i> species             | 45 (4.4)   | 17/44 (38.6%) meropenem                                  |
| <i>Klebsiella</i> species                | 39 (3.8)   | 3/33 (9.1%) 3 <sup>rd</sup> generation cephalosporines   |
| <i>Enterobacter</i> species              | 36 (3.5)   | 5/29 (17.2%) 3 <sup>rd</sup> generation cephalosporines  |

of antibiotic combination therapy. *J Clin Diagn Res.* 2014;8:ME05-8.

- Horan TC, Andrus M, Dudeck MA. CDC/ NHSN surveillance definition for health care-associated infection and criteria for specific types of infections in the acute care setting. *Am J Infect Control.* 2008;36:309-32.
- Clinical Laboratory and Standard Institute. Performance Standards for Antimicrobial Disc Susceptibility Tests. 2005, M100-S15. CLSI, Wayne PA.
- Tsering D C, Chanchal L, Pal R, Kar S. Bacteriological profile of septicemia and the risk factors in neonates and infants in Sikkim. *J Glob Infect Dis.* 2011;3:42-5.
- Prabhu K, Bhat S, Rao S. Bacteriologic profile and antibiogram of blood culture isolates in a pediatric care unit. *J Lab Physicians.* 2010;2:85-8.
- Indian Network for Surveillance of Antimicrobial Resistance (INSAR) group, India. Methicillin resistant *Staphylococcus aureus* (MRSA) in India: Prevalence and susceptibility pattern. *Indian J Med Res.* 2013;137:363-9.
- Karunakaran R, Raja NS, Ng KP, Navaratnam P. Etiology of blood culture isolates among patients in a multidisciplinary teaching hospital in Kuala Lumpur. *J Microbiol Immunol Infect.* 2007;40:432-7.
- Turner PJ. Meropenem activity against European isolates: Report on the MYSTIC (Meropenem Yearly Susceptibility Test Information Collection) 2006 results. *Diagn Microbiol Infect Dis.* 2008;60:185-92.
- Indian Council of Medical Research. Standard Operating Procedure for Antimicrobial Resistance Surveillance and Research Network. ICMR, New Delhi, 2015.

## Prevalence of Congenital Hypothyroidism in Northern Border Region of Kingdom of Saudi Arabia

This retrospective study was done to assess the prevalence of congenital hypothyroidism among children born in Arar city, Kingdom of Saudi Arabia during years 2008 to 2014. Data were collected from newborns registry in Central hospital. The prevalence of congenital hypothyroidism was 2.6 per 10,000 live births with no gender difference.

**Keywords:** Neonate, Newborn screening, Prevalence, Thyroid disorders.

Congenital hypothyroidism (CH), occurring in approximately 1:2000 to 1:4000 newborns [1], is one of the most common preventable causes of intellectual disability [2]. Screening programs for CH have been developed in many countries [3]. There are three screening methods used including primary thyroid-stimulating

hormone (TSH) with backup thyroxin (T4), primary T4 with backup TSH, and combined TSH plus T4 method. Primary TSH with backup T4 is more sensitive while primary T4 with backup TSH is more specific in detecting CH [4].

This retrospective study was done to assess the prevalence of congenital hypothyroidism among children born in Arar Central Hospital, Arar city, Kingdom of Saudi Arabia between 2008 and 2014. We analyzed records from 19,013 deliveries and 18,989 screened newborns. Blood samples were collected on filter paper from newborns on the fifth day after delivery, and tested for both TSH and T4. The cut-off value for TSH was 10 mU/L.

The prevalence of hypothyroidism among newborns for the whole observation period 2008 to 2014 was 3.1 per 10,000 in males and 2.1 per 10,000 in females, and the total prevalence was 2.6 per 10,000 (0.03%) (**Table I**).

The incidence of congenital hypothyroidism in our area is similar to that reported in other countries [5], but lower than that reported in Najran, a southern province of

Saudi Arabia, where the incidence has been reported to be 1 in 1400 [6]. Other studies in the country reported an incidence of 1 in 2500 to 1 in 3500.

In conclusion, the prevalence of congenital hypothyroidism in Arar City, Saudi Arabia for the observation period between 2008 to 2014 was 2.6 per 10,000 (0.03%) with no gender differences.

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#### REFERENCES

1. Harris KB, Pass KA. Increase in congenital hypothyroidism in New York State and in the United States. *Mol Genet Metab.* 2007;91:268.
2. Cao XY, Jiang XM, Dou ZH, Rakeman MA, Zhang ML, O'Donnell K. Timing of vulnerability of the brain to iodine deficiency in endemic cretinism. *N Engl J Med.* 1994;331:1739-44.
3. Working Group on Neonatal Screening of the European Society for Paediatric Endocrinology. Revised guidelines for neonatal screening programmes for primary congenital

**TABLE I** DETAILS OF NEWBORNS SCREENED FOR HYPOTHYROIDISM

| Year  | Number of deliveries | Sex   |         | Number of screened newborns | Newborn with positive screening |         |
|-------|----------------------|-------|---------|-----------------------------|---------------------------------|---------|
|       |                      | Males | Females |                             | Males                           | Females |
| 2008  | 2562                 | 1323  | 1239    | 2560                        | 1                               |         |
| 2009  | 2473                 | 1264  | 1209    | 2470                        |                                 | 1       |
| 2010  | 2622                 | 1327  | 1295    | 2618                        |                                 | 1       |
| 2011  | 2587                 | 1265  | 1322    | 2585                        | 1                               |         |
| 2012  | 2864                 | 1453  | 1411    | 2860                        |                                 |         |
| 2013  | 2912                 | 1498  | 1414    | 2908                        |                                 |         |
| 2014  | 2993                 | 1530  | 1463    | 2988                        | 1                               |         |
| Total | 19013                | 9660  | 9353    | 18989                       | 3                               | 2       |

hypothyroidism. *Horm Res.* 1999;52:49-52.

4. American Academy of Pediatrics, Rose SR; American Thyroid Association, Brown RS; Public Health Committee, Lawson Wilkins Foley T, Keplowitz PB, Kaye CI, *et al.* Pediatric Endocrine Society. Update of newborn screening and therapy for congenital hypothyroidism. *Pediatrics.* 2006;117: 2290-303.
5. Al-Jurayyan NA, Shaheen FI, Al-Nuaim AA, Al-Desouki MI, Faiz A, Al Herbish AS, *et al.* Congenital hypothyroidism: Increased incidence in Najran Province, Saudi Arabia. *J Trop Paediatr.* 1996;42:348-51.
6. Al-Jurayyan NA, Al-Nuaim AA, Redha MA, El-Desouki MI, Al Herbish AS, Abo Bakr AM, *et al.* Neonatal screening for congenital hypothyroidism in Riyadh: analysis of six years, experience. *Ann Saudi Med.* 1996;16:20-3.