

SUMMARY

Childhood pneumonia is an important cause of morbidity mortality in children. Community-acquired pneumonia is one of the most common serious infections in children, with an annual incidence of 34 to 40 cases per 1,000 children. Hospital-acquired or nosocomial pneumonia is the second-most-common nosocomial infection and is usually bacterial in origin.

Copeptin is the C-terminal part of pro- arginine vasopressin (AVP) and is released together with AVP during processing of the precursor peptide. Copeptin appears to be superior to cortisol in determination of the stress level.

The aim of the present study was to investigate the serum levels of copeptin in a group of hospitalized children with pneumonia, compare them to a matched healthy group of controls, and study relation of copeptin to other clinical and laboratory parameters of pneumonia.

The present case - control study was conducted at New University Children's Hospital, Faculty of Medicine, Cairo University, Egypt from January to December 2013. Forty-one Egyptian patients were included as cases. They were admitted patients suffering from pneumonia. Forty healthy matched children were included as controls. They were recruited from the follow-up and surgical clinics of the hospital after consent from their caregivers.

All cases were subjected to a complete clinical study (thorough history and physical examination) upon study inclusion, with emphasis on symptoms and signs of pneumonia. The Clinical Pulmonary Infections Score (CPIS) was calculated.

The following investigations were performed: complete blood counts (CBC), chest x- ray, quantitative C-reactive protein (CRP), Erythrocyte sedimentation rate in the first hour (ESR), cultures (sputum / blood) and serum copeptin by a commercial enzyme linked immunosorbent assay (ELISA) kit.

The study reached the following:

- Copeptin serum levels are significantly higher in pneumonic children compared to healthy controls.
- Copeptin serum levels are significantly higher in non-survivor pneumonic children compared to survivors.
- Copeptin significantly correlated directly with total leukocytic count of pneumonic children
- Copeptin is more prognostic than diagnostic marker in pediatric pneumonia

The study concludes that serum copeptin levels could be suggested as a prognostic biomarker for severe pneumonia in children.