

# Plasma thymus and activation-regulated chemokine (TARC) as diagnostic marker in pediatric Hodgkin lymphoma

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## Introduction

Pediatric classical Hodgkin's lymphoma (cHL) is characterized by malignant Hodgkin Reed Sternberg cells located in an inflammatory microenvironment<sup>1,2</sup>. Blood biomarkers result from active crosstalk between malignant and non-malignant cells<sup>1,2</sup>. One promising biomarker in adult cHL patients is "thymus-and-activation-regulated chemokine" (TARC)<sup>3,4,5</sup>. The objectives of this study were to define normal TARC values in children not diagnosed with cHL, to investigate TARC as diagnostic and response marker in pediatric cHL patients and to correlate TARC levels with clinical parameters in cHL patients.

## Methods

In this multicenter prospective study, plasma and serum samples were collected of newly diagnosed cHL patients before start of treatment (n = 88), and from randomly selected non-cHL patients (n = 80). Furthermore, in cHL patients, TARC levels were measured during treatment before each cycle of chemotherapy. TARC levels were measured by enzyme linked immunosorbent assay. TARC levels of the cHL patients were compared to the non-cHL group to investigate the accuracy of TARC as a diagnostic marker. Second, TARC levels were correlated with clinical parameters in cHL patients. Finally, TARC levels were correlated with remission status on interim and end of treatment FDG-PET scan.

## Results

The non-cHL patients had a median plasma TARC value of 71 pg/mL (range: 18-762), compared to 14.633 pg/mL (range: 124-83755) before start of treatment in cHL patients (P < .001). A TARC cutoff level of 942 pg/mL maximized the sum of sensitivity (97.9%) and specificity (100%). For serum TARC, data were comparable. TARC plasma levels at diagnosis were significantly associated with age, treatment level, bulky disease, B-symptoms, erythrocyte sedimentation rate and C-reactive protein. Results on TARC levels during treatment correlated with remission status will follow.

## Conclusion

TARC was found to be a highly specific and sensitive diagnostic marker for pediatric cHL. This noninvasive marker could be of great value as screening test in the work-up for pediatric patients with lymphadenopathy.

**Affix****References**

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