Hyperglycaemia is a common occurrence during the treatment for paediatric acute lymphoblastic leukaemia (ALL). Emergence of new evidence exhibits conflicting results. The incidence of hyperglycaemia during chemotherapy has not been well described in the Asian population.

**OBJECTIVES**

The aim of study is to delineate the characteristics of paediatric patients at risk for hyperglycaemia during chemotherapy.

**METHODS**

This retrospective study involved chart review of consecutive patients aged younger than 18 years with diagnosis of ALL in a medical centre in Taiwan in 1997-2008. Hyperglycaemia was defined by random plasma glucose levels 200 mg/dL or fasting glucose levels 126 mg/dL at least two separate samplings. Risk factors for hyperglycaemia were described with crude and adjusted odds ratios (OR) with 95% confidence intervals (CI) in the univariate and multivariate regression analysis.

**RESULTS**

A total of 133 patients were included for analysis. Overall, 22 (16.5%) patients experienced hyperglycaemia during ALL treatment. Most hyperglycaemic episodes occurred within the first 8 days after prednisolone use. Age older than 10 years was the most important predictor of hyperglycaemia (adjusted OR = 10.88, 95% CI 2.40-49.37). Patients with fasting glucose concentration ≥ 100 mg/dL were also 5.7 (95% CI 1.63-19.93) fold likely to develop hyperglycaemia, while the predictive significance of obesity was attenuated after adjustment.

**CONCLUSIONS**

Age and fasting glucose have the highest predictive value on subsequent occurrence of hyperglycaemia during chemotherapy. Cautions in clinical care should be given to those patients at high risk for hyperglycaemia, particularly in obese adolescents.