

# Increased toxicities in children with Burkitt lymphoma treated with Rituximab – Experience from a tertiary cancer centre In India

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May 29, 2020

## Abstract

Background: Even though rituximab has emerged as the standard of care for management of high risk paediatric burkitt lymphoma(BL) its safety in children from the low-middle income countries(LMICs) remains to be proven. We herein report our experience of using rituximab in patients with BL treated in our institute. Patients and Methods: All patients diagnosed of BL between January-2015 through December-2017 were treated in a risk stratified manner with either modified MCP-842 or modified LMB protocol. Patients with poor response to MCP 842 were shifted to LMB-salvage regimen. In addition, rituximab was given for selected patients of LMB group B or C. Result: Forty-two(49.4%) of 85 analyzed patients with BL received rituximab [Median dose:1500(Range:375-1875) mg/m<sup>2</sup>]. The incidence of febrile neutropenia(p=0.02), pneumonia(p=0.005), Intensive care unit admissions(p=0.002) and toxic deaths(p=0.04) were higher amongst BL patients who received rituximab. Pneumonia was fatal in 11 of 16(69%) patients who received rituximab. The mortality was 100% for patients who developed recurrent pneumonia after completion of treatment. On multivariate analysis, rituximab continued to be significantly associated with toxic deaths, HR:11.45(95%CI: 1.87-70.07; p=0.008). The addition of rituximab to intensive chemotherapy resulted in an inferior 1-year event free survival (49.4±8.1% vs 79.3±6.5%;p=0.025) and 1-year overall survival (63.1±8.5% vs 91.8± 4.5%;p=0.007). Also, the addition of rituximab did not improve 1-year relapse free survival (78.3±7.3% vs 83.9±6.0%;p=0.817). Conclusion: The potential immunomodulatory effect of rituximab and increased susceptibility to infections in patients from LMICs being treated under resource-constrained situations has to be carefully considered while choosing this drug in the treatment BL.

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**Figure 1: Flow diagram with treatment, response assessment and outcome in patients with Burkitt lymphoma**

