

Resource Summary Report

Generated by [dkNET](#) on Sep 9, 2026

Hepatotoxicity during 6-thioguanine treatment: protocol for a systematic review

DOI:10.17504/protocols.io.zjnf4me

Type: Protocol

Proper Citation

Linea Natalie Toksvang, Rikke Hebo Larsen, Thomas Leth Frandsen, Kjeld Schmiegelow, Cecilie Utke Rank 2019. Hepatotoxicity during 6-thioguanine treatment: protocol for a systematic review. protocols.io dx.doi.org/10.17504/protocols.io.zjnf4me

Protocol Information

URL: <https://dx.doi.org/10.17504/protocols.io.zjnf4me>

Authors: Linea Natalie Toksvang, Rikke Hebo Larsen, Thomas Leth Frandsen, Kjeld Schmiegelow, Cecilie Utke Rank

Summary: Hepatotoxicity was recognised as a complication of 6-thioguanine (6TG) in 1976. Since then, 6-TG associated hepatotoxicity in the form of acute sinusoidal obstruction syndrome (SOS), also known as veno-occlusive disease (VOD), has notably been reported in childhood acute lymphoblastic leukaemia (ALL), whereas chronic nodular regenerative hyperplasia (NRH) has been reported in adults with inflammatory bowel disease (IBD) as well as in childhood ALL. However, SOS and NRH should be considered part of a spectrum of microvascular disorders caused by endothelial injury. Nevertheless, the cellular mechanisms responsible for the sinusoidal damage, being pivotal to their development, remain to be established. 6TG-related SOS and NRH have been hypothesised to be dose-related, since they do not seem to occur with low cumulative doses. .justify:after { content: ""; display:inline-block; width: 100%; } The recent finding that higher levels of thioguanine nucleotides incorporated into leucocyte DNA (DNA-TGN) correlate to a lower relapse risk, calls for reappraisal of the feasibility of prolonged 6TG treatment for childhood ALL, while avoiding the risk of SOS and NRH. .justify:after { content: ""; display:inline-block; width: 100%; } .justify:after { content: ""; display:inline-block; width: 100%; } **Objectives** .justify:after { content: ""; display:inline-block; width: 100%; } - Primary objective: To assess the incidence of hepatotoxicity in patients treated with 6TG compared to 6MP or standard care. .justify:after { content: ""; display:inline-block; width: 100%; } - Secondary objective: To explore if a safe dose of 6TG can be established. .justify:after { content: ""; display:inline-block; width: 100%; }

Associated Publications: Toksvang LN, Schmidt MS, Arup S, Larsen RH, Frandsen TL, Schmiegelow K, Rank CU (2019) Hepatotoxicity during 6-thioguanine treatment in

inflammatory bowel disease and childhood acute lymphoblastic leukaemia: A systematic review. PLoS ONE 14(5): e0212157. doi: [10.1371/journal.pone.0212157](https://doi.org/10.1371/journal.pone.0212157)

Affiliations: Department of Paediatrics and Adolescent Medicine, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark, Department of Paediatrics and Adolescent Medicine, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark, Department of Paediatrics and Adolescent Medicine, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark, Department of Paediatrics and Adolescent Medicine, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark; Institute of Clinical Medicine, The Faculty of Medicine, University of Copenhagen, Denmark. , Department of Hematology, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark; Pediatric Oncology Research Laboratory, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark.

External URL: <https://doi.org/10.1371/journal.pone.0212157>

Version: 1

Publication Date: 2019

Proper Citation: Linea Natalie Toksvang, Rikke Hebo Larsen, Thomas Leth Frandsen, Kjeld Schmiegelow, Cecilie Utke Rank 2019. Hepatotoxicity during 6-thioguanine treatment: protocol for a systematic review. protocols.io dx.doi.org/10.17504/protocols.io.zjnf4me

Record Creation Time: 20210329T220531+0000

Record Last Update: 20210329T220956+0000

Data and Source Information

Source: