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## Thrombocytopenia and whole blood transfusion in children with severe falciparum malaria

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OBJECTIVES/GOALS: Severe malarial anemia due to *Plasmodium falciparum* is often accompanied by thrombocytopenia. Treatment includes transfusion of whole blood, which contains erythrocytes, platelets, and other blood components. The objective of the study was to assess the effect of whole blood transfusion on survival in children with severe falciparum malaria and to examine the potential interaction of thrombocytopenia with malaria mortality and transfusion response. METHODS/STUDY POPULATION: We analyzed a retrospective cohort of 842 hospitalized children in Zambia with severe malarial anemia (703 transfused, 139 not transfused due to stock-out or other reason). Severe malarial anemia was defined as a positive rapid diagnostic test or blood smear in combination with an admission hemoglobin concentration ≤5 g/dL. RESULTS/ANTICIPATED RESULTS: Mortality was 13% (94/703) in the transfused group and 24% (34/139) in the non-transfused group. Kaplan-Meier survival estimates stratified by transfusion status and thrombocytopenia (150,000/μL threshold) showed increased mortality in children with thrombocytopenia who did not undergo transfusion, with no differences in mortality among the other transfused and non-transfused groups (log-rank test $P = 0.0001$). Effect modification analysis by Cox proportional hazards regression adjusted for age, sex, hemoglobin concentration, blood group type, and eosinophilia showed a significant interaction between platelet count and transfusion status ($P = 0.028$). Children with thrombocytopenia who were transfused and died had little or no post-transfusion increase in platelets, in contrast to those who survived. Freshness of transfused whole blood, construed from expiration dates, correlated with greater platelet recovery and improved survival. DISCUSSION/SIGNIFICANCE OF IMPACT: The role of platelets in malaria pathophysiology is complex and incompletely understood; prior studies describe preferential binding of platelets to parasitized erythrocytes and direct parasitocidal activity, whereas others detailed deleterious effects in malaria involving the central nervous system vasculature. These findings point to a potential clinical role for platelet-directed transfusion strategies to improve survival in children with severe falciparum malaria, which should be further assessed in randomized interventional studies.

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## TL1 Team Approach to Peripartum Obsessive-Compulsive Disorder: a meta-analysis of the perceived impact of gestation and delivery on symptomology

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OBJECTIVES/GOALS: Obsessive compulsive disorder (OCD) is a serious and impairing disorder. The peripartum is associated with changes in pre-existing OCD, including exacerbation and improvement of the disorder. This meta-analysis seeks to understand the proportion of women reporting a change in OCD during this time. METHODS/STUDY POPULATION: Nine studies with independent samples examining change in obsessive-compulsive symptomology (OCS) in the peripartum were included in the meta-analysis. Studies were included if the sample examined with women with a clinical diagnosis of OCD that pre-existed pregnancy onset. The meta-analysis was conducted using R Studio with Meta, Metafor and Weightr packages. A moderation analysis was conducted to examine the impact of gestational period on OCD symptoms. Gestational periods were defined as pregnancy, postpartum, or the peripartum. Peripartum refers to a collapsed postpartum/pregnant period such that the period was not identified or specified during data collection. RESULTS/ANTICIPATED RESULTS: The summary proportion of women who experienced no change in symptoms was 46.7% (CI: 42.0-51.4%). No change by period was: pregnancy 49.6% (CI: 36.3-62.9%); postpartum 45.6% (CI: 41.4-49.9%); peripartum 52.4% (CI: 42.4-50.3%). The summary proportion of women who experienced exacerbation was 39.2% (CI: 33.5-45.5%). Exacerbation by period: pregnancy 35.5% (CI: 24.8-47.9%); postpartum 42.9% (CI: 34.8-51.4%); peripartum 34.6% (CI: 23.7-47.4%). The summary proportion of women who experienced improvement was 11.5% (CI: 9.3-14.4%). Improvement by period: pregnancy 42.9% (CI: 14.7-77.0%); postpartum 7.8% (CI: 5.7-10.4%); peripartum 19.6% (CI: 13.7-27.3%). Gestational period had a moderating effect. DISCUSSION/SIGNIFICANCE OF IMPACT: During the peripartum 46% report no change, 40% a worsening and 12% an improvement. Improvement typically occurs during pregnancy and may be followed by a postpartum worsening. This may reflect a hormonally-sensitive subsection of women impacted by the acute changes that occur during this time.

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## Twenty-four-hour Urinary Sodium Excretion Estimated from a Spot Urine Sample May Be Used as an Indicator of Intake in CKD Patients

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OBJECTIVES/GOALS: Sodium (Na) intake can elevate blood pressure and is a factor in developing chronic kidney disease (CKD). Twenty-four-hour urinary Na (24hUNa) is the gold standard for assessing Na intake but is burdensome. Validated equations estimate 24hUNa (e24hUNa) from a spot urine sample, but these estimations are not validated against a known Na intake in CKD. METHODS/STUDY POPULATION: The current study is a secondary analysis of a 9-day controlled feeding study in moderate CKD patients matched to healthy adults. Only CKD patients were used for the current analyses ($n = 8$). Participants consumed a controlled diet for 9 days, providing ~2400 mg Na/d as determined by inductively coupled plasma optical emission spectroscopy (ICP). On days 7 and 8, participants collected all urine in an inpatient setting, beginning with a fasting sample on day 7. Urine sample mineral analyses were performed by ICP and urinary creatinine by the Jaffe reaction. The day 7 fasting urine sample was used to calculate e24hUNa using 6 published equations. Log-transformed Na intake, measured 24hUNa, and e24hUNa were compared by repeated-measures ANOVA with planned contrasts using SAS. RESULTS/

https://doi.org/10.1017/cts.2020.153 Published online by Cambridge University Press