Background: A response to platelet transfusion is assessed by post transfusion platelet increment and failure to reach a desired increment is termed platelet refractoriness, which is best measured by the corrected count increment (CCI) which takes into account the dose of platelets transfused, weight and height. The causes of platelet refractoriness can be immune or non-immune. In Tanzania, platelet refractoriness has not yet been evaluated. Therefore, we examined the prevalence of platelet refractoriness and factors affecting platelet refractoriness among patients admitted to the national referral hospital in Tanzania. **Methods: We** conducted a cross-sectional study on 161 hospitalized patients above one year of age who were diagnosed with conditions that may potentially require platelet transfusion. A standardized clinical record form was used to collect information on demographic characteristics and the patients' clinical conditions. Pre- and post-transfusion platelet counts (one hour and 24 hours post-transfusion) were checked to compute the CCI. A total of 51 single donor platelet concentrates were analysed to assess their quality in terms of platelet count. **Results:** Most of the 51 platelet concentrates were of sufficient quality as the majority (48; 96%) had a count of > 5.5 x 109 platelets per concentrate and 48 (96%) also had a residual white cell count of < 0.8 cells/mL. Of the 161 patients who received platelet transfusion, the proportion with platelet refractoriness was 28%. Among several factors, fever was the only factor significantly associated with platelet refractoriness, with an adjusted odds ratio of 10.98 (95% CI 3.93 - 30.66; $p<0.001$). **Conclusion:** The platelet concentrates prepared at our hospital had good quality, and conformed to the guidelines of Tanzania National Blood Transfusion Services and the Association for the Advancement of Blood & Biotherapies in the US. Platelet refractoriness was found in almost one-third of the patients and was strongly associated with fever.