Reply to Comment on Sonographic Evaluation of Abdominal Organs in Sickle Cell Disease

In our study, we reported that "Assessment of abdominal organs such as the liver, gallbladder, spleen, and kidneys by ultrasound among sickle cell disease (SCD) patients revealed varied remarkable changes in these organ sizes, echotexture, intraluminal deposits, and wall thickness among the studied patients. Abdominal sonography is an easy, affordable, readily available, accurate, and noninvasive diagnostic tool for early detection of organ changes for further management and follow-up of SCD patients."[1]

It is true that without screening for other common diseases such as hepatitis or metabolic disease, the finding might be a result of other confounding disorders. However, in our study, we clearly noted the limitations of our findings that "findings were not specific, as no biopsy or any other imaging modality was used to confirm sonographic findings.[1] Previous studies[2,3] reported similar findings.

Our discussions in this study were, however, limited to the scope of the study. Further, discussions on the elaborate clinical importance of findings and management of SCD patients were beyond the scope of this study.

Hepatosplenomegaly, which is the result of extramedullary erythropoiesis, is the common finding in sickle cell disease.[4] Nevertheless, the abdomen ultrasonography is found to inferior to magnetic resonance imaging (MRI). Although the previous studies have reported that for the monitoring of iron overload in transfusion dependent cases, MRI is routinely used.[5,6] This may probably be the case in developed countries, where this equipment is readily available and routinely used for imaging of complications in SCD. Our study reported that ultrasonography as a simple, affordable, and easily accessible imaging modality that plays an important role in early detection of these changes for further management and follow-up of SCD patients.[1] MRI actually provides superior multiplanar imaging and better image resolution which is important in imaging iron overload in transfusion-dependent cases. Previous researchers Rosado *et al*.[7] reported ultrasound and MRI as the best methods for characterization of muscle and soft-tissue changes. MR techniques offer advantages over traditional methods of determining iron load as they are noninvasive, and therefore, more acceptable to patients, and MRI techniques measure iron load within the target organ rather than relying on a surrogate indicator.[8] Early monitoring and detection can be enhanced by ultrasonography of the liver, spleen, kidneys, and the gallbladder among others. Ultrasonography is a simple, noninvasive, affordable, and easily accessible imaging modality in a resource scare setting like ours where, ignorance, limited exposure to health education and access to healthcare facilities may play a role. Regional variations in organ size and parenchymal echotexture among SCD patients exist in different publications.[1] There is a need to develop models of care appropriate to the management of SCD in sub-Saharan Africa which will be based on constant monitoring, early detection of crises, and early presentation to the specialist treatment centers, among others were recommendations in our study.[1]

The routine use of MRI in monitoring of iron overload in transfusion-dependent cases as discussed by Krittayaphong *et al*. and Chuansumrit *et al*.[5,6] may however, require appropriate calibration and validation for universal acceptability and application of MRI techniques to measure tissue iron concentrations as hematologists no longer need to make subjective decisions about chelation therapy based on the general degree of iron loading inferred from infrequent measures of liver iron concentration (LIC) from liver biopsy and changes in serum ferritin levels over time. Periodic MRI assessments provide quantitative data for the calculation of chelation effectiveness, which allow hematologists to make informed, data-driven, timely decisions about initiation, and adjustment of chelation therapy.[8-12]

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Conflicts of interest

There are no conflicts of interest.

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Geofery Luntsi*

Department of Medical Radiography, College of Medical Sciences, University of Maiduguri, Maiduguri, Borno State, Nigeria

Charles Ugwoke Eze

Department of Medical Radiography and Radiological Sciences, University of Nigeria, Enugu Campus, Enugu State, Nigeria

Address for correspondence: Mr. Geofery Luntsi, Department of Medical Radiography, College of Medical Sciences, University of Maiduguri, Maiduguri, Borno State, Nigeria.
E-mail: geostuffy@unimaid.edu.ng