

G6PD - Hydroxychloroquine (Pharmacogenomics)

Testing Recommendation

Insufficient evidence

See also Definitions and Criteria for Testing Recommendations and Ratings.

Evidence Rating

Outcome*: Hemolytic Anemia – Overall Evidence Quality: Poor (Evidence of Association: Weak; Evidence of Testing Benefit: Weak)

**Outcome with the highest overall evidence quality is displayed here. The discussion below describes evidence related to all outcomes for which there are meaningful published data.*

Management

Hydroxychloroquine prescribing information recommends using caution when administering hydroxychloroquine to patients with glucose-6-phosphate dehydrogenase (G6PD) deficiency due to reports of hemolysis (Plaquenil 2018). However, strong evidence for this association is lacking and current American College of Rheumatology (ACR) guidelines for the treatment of rheumatoid arthritis make no recommendations for checking G6PD status prior to initiation of treatment with hydroxychloroquine (Singh 2016).

Related Information

- Glucose-6-Phosphate Dehydrogenase
- Hydroxychloroquine

Index Terms

G6PD; Glucose-6-Phosphate Dehydrogenase; Hydroxychloroquine

Discussion

During more than 700 months of cumulative hydroxychloroquine exposure, there were no reported cases of hemolysis among the 11 glucose-6-phosphate dehydrogenase (G6PD)-deficient patients in a retrospective chart review of 275 patients who received hydroxychloroquine (for various indications) and had their G6PD level tested. Only two of the G6PD-deficient patients had documented hemolysis in their chart, but the hemolysis occurred when the individuals were not taking hydroxychloroquine. However, of the nine patients with G6PD deficiency and no documented hemolysis, six never had haptoglobin or lactate dehydrogenase tested during periods of anemia to evaluate for hemolysis (Mohammad 2018). Another retrospective chart review of 170 patients with rheumatoid arthritis or systemic lupus erythematosus identified a single G6PD-deficient patient who, despite long-term use of hydroxychloroquine, did not experience any adverse clinical effects (Quinones 2011).

Hydroxychloroquine has not been included in thorough literature reviews investigating use of potentially hemolytic drugs in G6PD-deficient patients (Luzzatto 2014; Youngster 2010).

References

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Singh JA, Saag KG, Bridges SL, et al. 2015 American College of Rheumatology guideline for the treatment of rheumatoid arthritis. *Arthritis Rheumatol*. 2016;68(1):1-26.[[PubMed 26545940](#)]

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