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# Spuriously Low HbA1C Levels in a Type II Diabetes Patient Taking Dapsone

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## Spuriously Low HbA1C Levels in a Type II Diabetes Patient Taking Dapsone

Sir,

Glycosylated hemoglobin (HbA1C) level is a commonly used laboratory investigation in diabetes patients, which reflects glycemic control over a period of 3 months. In various instances, HbA1C levels may be falsely low leading to suboptimal management of diabetes. One such example is the use of dapsone, which is an antibiotic, commonly used to treat various conditions such as leprosy, acne, ulcers etc.

We report a 48-year old female patient with type 2 diabetes and hypertension who was started on dapsone for non-healing oral ulcers. She was on biphasic insulin aspart 30 (novomix 30) before meals for her diabetes. Before the start of dapsone, she had an HbA1C of 10.7%; therefore, her insulin doses were increased and metformin was also added. After the start of dapsone, the patient started having falsely low HbA1C of <4% with fasting blood glucose value of 105 - 110 mg/dl and a random blood glucose value of 210 mg/dl with no hypoglycemic episodes. She did not have anemia before the start of dapsone (hemoglobin (Hb) 12 gm/dl); however, 5 months after the start of dapsone therapy, she developed mild anemia (Hb, 9.6 gm/dl) with a very low HbA1C of <4%. Dapsone was stopped after one year of her treatment with resolution of oral ulcers and after 3 months, her HbA1C increased to 6.6% and 6 months later, it became 8.8%.

The relation of dapsone usage and falsely low HbA1c has been established by several case reports.<sup>1-3</sup> Several mechanisms have been proposed to explain this phenomenon. Firstly, dapsone causes a decrease in the average life span of red blood cells (RBC's) thus decreasing HbA1C levels.<sup>2</sup> Furthermore, dapsone may also cause the conversion of hemoglobin to methemoglobin which causes spuriously low HbA1C levels.<sup>3</sup> In this patient, mild anemia developed after the start of dapsone which might have contributed to the low HbA1C levels. Physicians should be aware of dapsone-induced lowering of HbA1C. Perhaps in patients receiving dapsone, fasting and random blood sugars should be used to guide the management of diabetes in order to avoid any confusion.

### REFERENCES

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