

*Case Report*

## **Benefits of kinesiotherapy and aquatic rehabilitation on sickle cell anemia. A case report**

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**ABSTRACT.** The process of hemoglobin polymerization and the consequent sickling of red blood cells that occurs in patients with sickle cell disease shortens the half-life of red blood cells. It causes vaso-occlusive complications, as well as pain and pulmonary and cardiovascular dysfunction. We evaluated an aquatic rehabilitation program used for patients with sickle cell anemia and examined the possible benefits that exercise in warm water has for the circulatory system, for relieving pain, and for increasing lung capacity. The patient was a 32-year-old female. The parameters that we used in this study include respiratory muscle strength (which was calculated by measuring maximum inspiratory pressures and maximum expiratory pressures), the McGill and Wisconsin pain questionnaires (in order to evaluate the patients' characterizations and descriptions of their pain), and the SF-36 Health Survey. The treatment included warm water exercises, stretching, aerobic exercise, and relaxation, during two sessions of 45 min per week for 5 weeks. The patient experienced a significant decrease in pain, a significant increase in

the strength of respiratory muscles, and improved quality of life. We conclude that aquatic rehabilitation can be used to improve the clinical condition of sickle cell anemia patients, and we encourage more research on this new treatment regime, in comparison with other types of therapies.

**Key words:** Sickle cell anemia; Hemoglobinopathy; Kinesiotherapy; Aquatic rehabilitation