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***In vitro* antioxidant and antisickling effects of *sennaalexandrina* on sickle cell**Dunya Ahmed Nori¹, Alyousef Z¹, Choudhry, H¹ Filimban, F¹ Ellassouli M Z², Helmi N³¹King AbdulAziz University Saudi Arabia;²King Fahad Medical Research Center, Saudi Arabia³University of Jeddah, Saudi Arabia

Sickle cell disease (SCD) is one type of blood diseases related to autosomal disorder 1. The sickle shaped red blood cells are the main cause of many problems in the blood vessels and capillaries^{1,2}. Many natural plants have been used in treatment of sickle cell anemia and they listed as antisickling agents in several researches^{3,4} *Sennaalexandrina* (S) is a medicinal plant that has many popular uses, and has been proved its efficacy^{5,6}. The aim of this study was to assess the antioxidants activity and the antisickling effect of (S) extractions.

Method: Air-dried leaves of (S) plant were grinded and the active components were extracted by maceration in water and methanol as solvents. The antioxidants activity of (S)-water and (S)-methanol were assessed by way of the radical scavenging method using 2,2-diphenyl-1-picrylhydrazyl (DPPH). To determine the antisickling effect of (S) extracts; 20 samples were collected from sickle cell anemia patients. Different concentrations of (S) extracts (500 and 1000 µg/mL) were added on the sample and incubated. A drop of each sample was examined with light microscope. Normal and sickled RBCs were calculated and expressed as the percent of sickling. The stabilization effect of the extracts was measured by the osmotic fragility test for erythrocytes Pauline et al., (2013)⁷.

Result: As estimated by DPPH method, (S)-water and (S)-Methanol extracts revealed an antioxidants activity by 87.71 and 97.71 % respectively compared to the 98.03 % of control. Sickle cells treated with extracts at different concentrations significantly reduced the percentage of sickling comparing to control samples. However, (S)-Methanol at 1000 µg/mL give the highest anti-sickling affect while (S)-Water at 1000 µg/mL showed the highest membrane cell stability.

Conclusion: The results showed that (S) extracts have antisickling effects. Therefore, the *Sennaalexandrina* may has a role in SCD management and a good impact on the patient's lives.

Biography

Dunya Ahmed Nori completed his Master degree in Science at the age of 29 years from king Abdu Alaziz university in 2017 with excellent degree in Biochemistry field. She got the Bachelor degree from the same university in the same field in 2013 with excellent degree - first honors. She has published two papers in reputed journals.

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