

Synthesis of new thiazolidinone derivatives and evaluation of their platelet aggregation inhibitory effect

S. Mirjan^{*}, Z. Soleimani, M. Esfahanizade, F. Kobarfard

Department of Medicinal Chemistry, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Background and Aims: Thromboembolic and cardiovascular disorders are responsible for mortality of many patients all over the world. The current medications which are being used in clinic, such as aspirin and clopidogrel suffer from some undesired side effects such as bleeding and gastrointestinal disorders. Therefore attempts in order to find new anti-platelet aggregation agents are still under way. A group of thiazolidinone derivatives were considered for synthesis in present study. This group of compounds is believed to exert their effect through thromboxane A₂ receptors.

Methods: Thiosemicarbazide in reaction with different aromatic aldehydes gave the thiosemicarbazone intermediates which are then reacted with chloroacetic acid to obtain the desired thiazolidinone derivatives. The synthesized compounds were characterized using ¹H-NMR, ESI-MASS and IR spectroscopy. **Results and Conclusions:** The in vitro antiplatelet activity of these compounds was evaluated using arachidonic acid (AA) and adenosine diphosphate (ADP) as aggregation inducers and some of the compounds showed satisfactory results.

Keywords: Thiazolidine-4-one; Platelet aggregation; Thrombin; GP IIb/IIIa receptor