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**Pathology scoring and aortic wall image analysis explore the role of Nicorandil & Atorvastatin in atherosclerosis: A histopathological experimental study**

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**Background:** Digital Pathology and image analysis occupied a fundamental role in solving many diagnostic and prognostic dilemmas in pathology. As well, it can provide the key stone in experimental research problems. In pharmacological studies the biochemical studies alone cannot provide a sure conclusion; as the serum levels of different subjects do not necessarily reflect the final changes at the tissue level. Nicorandil, a nicotinamide ester, and nitric oxide donor. Statins are the first choice for lowering cholesterol; both are supposed to play an important role in atherosclerosis management.

**Aim:** The aim of the study was to provide a histo and digital pathological proof on the real role of Nicorandil and Atorvastatin in atherosclerosis.

**Material and Methods:** It was carried out on high fat/high cholesterol diet (HF/HCD) induced atherosclerosis in rats as a model. The animals were divided into groups: normal (received normal diet), atherosclerotic (model), atorvastatin and nicorandil treated animals. Histopathological scoring and digital measuring of the aortic wall thickness by image analysis was done as well as a complete biochemical lipid profile.

**Results:** There was a significant improvement in the pathological score in the Nicorandil and atorvastatin treated groups compared with the model group. The median aortic wall thickness measured by the image analysis system showed significant difference between the studied groups.

**Conclusion:** The histopathological scoring and digital pathology by image analysis proved the biochemically suggested role of Nicorandil and atorvastatin in atherosclerosis.

**Biography**

Reham Shehab El Nemr Esmail has received her Master and Doctoral degree from faculty of medicine, Cairo University. She works as a pathology researcher in the Egyptian National Research Center (NRC) and elected for its center of excellence. She published many papers and shared in NRC's research projects. As well she is consultant of pathology in armed forces hospitals and ministry of health hospitals in Egypt.

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