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Regadenoson for Pharmacological Stress Tests: Blood Pressure, Heart Rate and Major Side Effects in 5780 Patients referred for Myocardial Scintigraphy. A High-Volume Single-Center Experience
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Abstract:

Background: Regadenoson is a highly selective A2A receptor agonist and approved in many countries for myocardial perfusion pharmacological SPECT stress imaging. As a vasoactive drug, Regadenoson does have side effects, but there is only data regarding this issue available from some smaller studies, no prospectively collected data from real world application in high-volume centers.

Methods: A standard dose of 400 µg i.v. was injected. Soon after the injection of Regadenoson, usually at a clearly visible increase of the heart rate, 99m Tc-Tetrofosmin was injected. Heart rate, blood pressure and ECG were continuously monitored before injection (rest), and up to 10 minutes. 395 patients (7%) had a history of COPD, 113 patients (2%) had a history of bronchial asthma. 1051 patients (18.2%) had a pre-existing 1st degree AV-block.

Results: The mean age was 71.9 ± 9.7 (33 - 95) years. Resting syst. BP was 128.9 ± 16.2 (80 - 190) mmHg with a signif. drop at 123.3 ± 20.3 (50 - 220) mmHg and after 10 min still signif. with 123.9 ± 15.5 (60 - 200) mmHg. Resting heart rate was 70.2 ± 12.3 (33 - 140) bpm, with a maximum of 94.6 ± 17.3 (52 - 193) bpm (signif.) and after 10 min 79.4 ± 13.2 (32 - 169) bpm (signif.). Frequent but minor side effects were feeling of increased breathing (64%), headache (21%), feeling of warmth (20%), pressure in the chest (17%) and pressure in the stomach (16%). Severe complications occurred in 10 pats with 0.03% each for systole, intermittent AV-Block, symptomatic bradycardia or symptomatic drop in BP and epilepsy. No patient died. There was neither a history of bronchial asthma nor of COPD in the group of cases showing severe complications. There was neither any case of Regadenoson-induced bronchospasm nor any stroke. All severe complications were observed within 10 minutes after the injection of Regadenoson, none was observed afterwards.

Conclusion: Generally, Regadenoson is well tolerated. Severe, life-threatening side effects are very rare (0.17%) and easy to treat with Atropine and - as officially recommended - with Aminophylline (if regionally available) or - like in Germany - with Theophylline. According to our experience, increased alert for patients with preexisting 1stdegree AV-Block is advisable.

Category (Complete): 30. Non Invasive Imaging: Nuclear

Keyword (Complete): Regadenoson ; Pharmacological stress ; Perfusion imaging

Suggested Keyword (Complete):
Clinical Implications (Complete):
***My study will help enable cardiovascular clinicians to... :** make pharmacological stress tests with Regadenoson safer.

Presentation Preference (Complete): Oral or Poster Presentation

Institution Information (Complete):
***Responsible Institution 1 :** Cardiology Practice

***City :** Munich

***Country:** Germany

Choose a Lead Investigator : 00000604657|Silber|Sigmund

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