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Abstract Preview

ICNC12 Nuclear Cardiology and Cardiac CT

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Title : Practical experience and side effects of Regadenoson in myocardial radionuclide perfusion imaging in over 2000 patients in a cardiology practice
Topic : 00.23 - Perfusion imaging methods and protocols
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Purpose: Vasodilator stress testing in myocardial perfusion imaging is indicated in patients who cannot be stressed adequately by physical exercise. Regadenoson, a highly effective selective A2A receptor agonist is an established and approved alternative to Adenosine for myocardial imaging. Major advantages over Adenosine are a single bolus injection with a fixed dose vs. a 6 minutes infusion of an individually calculated dose. In February 2012 we completely switched from Adenosine to Regadenoson.

Methods: Between February 2012 and October 2014 we performed myocardial radionuclide perfusion scintigraphy with 99m Tc-Tetrofosmin in a total of 10243 patients. Thereof in 2230 (21%) patients Regadenoson was used for pharmacological stress testing. Regadenoson was injected at 400µg over 20 seconds and after the heart rate increase, 99m Tc-Tetrofosmin was injected. Blood pressure, heart rate and ECG were monitored before and 10 minutes after the injection of Regadenoson. All side effects and possible complications were documented accurately and prospectively.

Results: 13% of the patients showed abnormal findings in the scintigrams (ischemia or infarction). The most frequent side effects were shortness of breath (68%), feeling of warmth (20%), headache (21%), feeling of pressure in the chest (23%) and in the „stomach" (16%). Less frequent side effects were dizziness in 8%, nausea (6%) and feeling of general weakness (3%). Very rare side effects were dry throat (1%), sweating (0.6%), vomiting (0,3%), palpitation (0,4%), severe drop of blood pressure (0.3%), sensation in the hands (0.1%) and 1st degree AV-Block (0.08%). In two patients (0.1%) a life threatening asystole occurred which could be interrupted by Aminophyllin and Atropine injections and sinus rhythm was rapidly restored. Patients were not harmed. Noticeable, in both patients the ECG before starting injection of Regadenoson showed 1st degree AV-Block.

Conclusions: Regadenoson is an established drug for pharmacological stress test and approved for myocardial scintigraphy. As compard to Adenosine, it is easier to handle and safer esp. in patients with obstructive lung disease. Life threatening side effects as asystole are very rare (1 permille) and quickly reversed with Aminophyllin and Atropine. According to the instructions for use, the risk of such an event is increased in patients with 2nd degree AV-Block, however 1st degree AV-Block is not mentioned. According to our experience, however, in patients with even 1st degree AV-Block, the staff should be aware that Aminophyllin and Atropine are ready to be used in case of emergency.