
Summary / Zusammenfassung

Abstract

AIMS: Although an added diagnostic and prognostic value of the global coronary artery calcification (CAC) score as an adjunct to single-photon emission computed tomography (SPECT)-myocardial perfusion image (MPI) has been repeatedly documented, none of the previous studies took advantage of the anatomic information provided by the unenhanced cardiac CT. Therefore, no co-registration has so far been used to match a myocardial perfusion defect with calcifications in the subtending coronary artery. To evaluate the prognostic value of integrating SPECT-MPI with CAC images were obtained from non-enhanced cardiac computed tomography (CT) for attenuation correction to predict major adverse cardiac events (MACE).

METHODS AND RESULTS: Follow-up was obtained in 462 patients undergoing a 1-day stress/rest (99m)Tc-tetrofosmin SPECT and non-enhanced cardiac CT for attenuation correction. Survival free of MACE was determined using the Kaplan-Meier method. After integrating MPI and CT findings, patients were divided into three groups (i) MPI defect matched by calcification (CAC ≥1) in the subtending coronary artery (ii) unmatched MPI and CT finding (iii) normal finding by MPI and CT. At a mean follow-up of 34.5 ± 13 months, a MACE was observed in 80 patients (33 death, 6 non-fatal myocardial infarction, 9 hospitalizations due to unstable angina, and 32 revascularizations). Survival analysis revealed the most unfavourable outcome (P < 0.001 log-rank test) for patients with a matched finding.

CONCLUSION: In the present study, a novel approach using a combined integration of cardiac SPECT-CAC imaging allows for refined risk stratification, as a matched defect emerged as an independent predictor of MACE.

Weitere Informationen unter http://www.ncbi.nlm.nih.gov/pubmed?db=pubmed&cmd=DetailsSearch&term=(kaufmann+p+AND+knuuti)+OR+(kaufmann+p+AND+hess)+OR+(kaufmann+p+AND+Eberli+F)+OR+(kaufmann+p+AND+Alkadhi+h)+OR+(Kaufmann+p+AND+luscher)+NOT+(Kaufmann+p+a+AND+krejs+g)+OR+(Kaufmann+p+AND+Bax+j)&log$=activity

Project Leadership and Contacts / Projektleitung und Kontakte

Prof Philipp Kaufmann (Project Leader) pak@usz.ch

Other Links to external Webpages / Andere Links zu externen Webseiten

http://www.ncbi.nlm.nih.gov/pubmed?db=pubmed&cmd=DetailsSearch&term=(kaufmann+p+AND+knuuti)+OR+(kaufmann+p+AND+hess)+OR+(kaufmann+p+AND+Eberli+F)+OR+(kaufmann+p+AND+Alkadhi+h)+OR+(Kaufmann+p+AND+luscher)+NOT+(Kaufmann+p+a+AND+krejs+g)+OR+(Kaufmann+p+AND+Bax+j)&log$=activity

Funding Source(s) / Unterstützt durch

SNF (Personen- und Projektförderung)
Duration of Project / Projektdauer

Jan 2010 to Dec 2013