Verifiering av återprojicerade planara bilder genererade från ett ring-konfigurerad CZT kamera för diagnosticering av ATTR amyloidos

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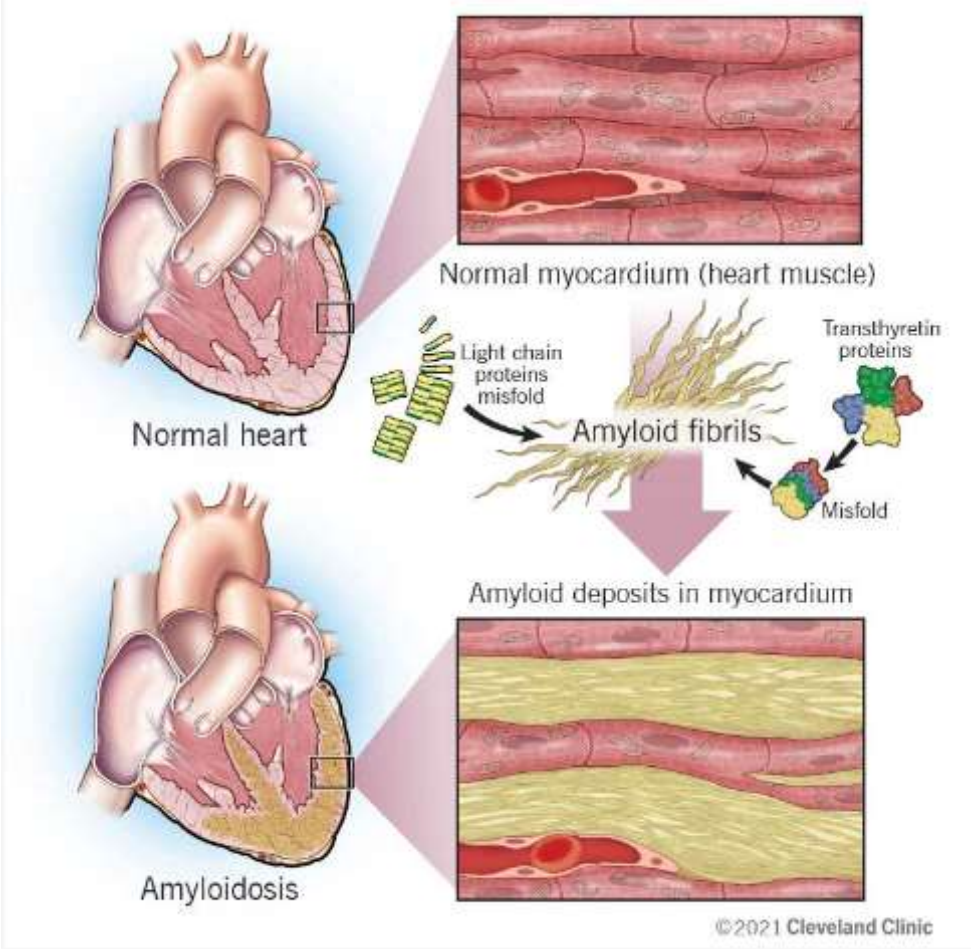
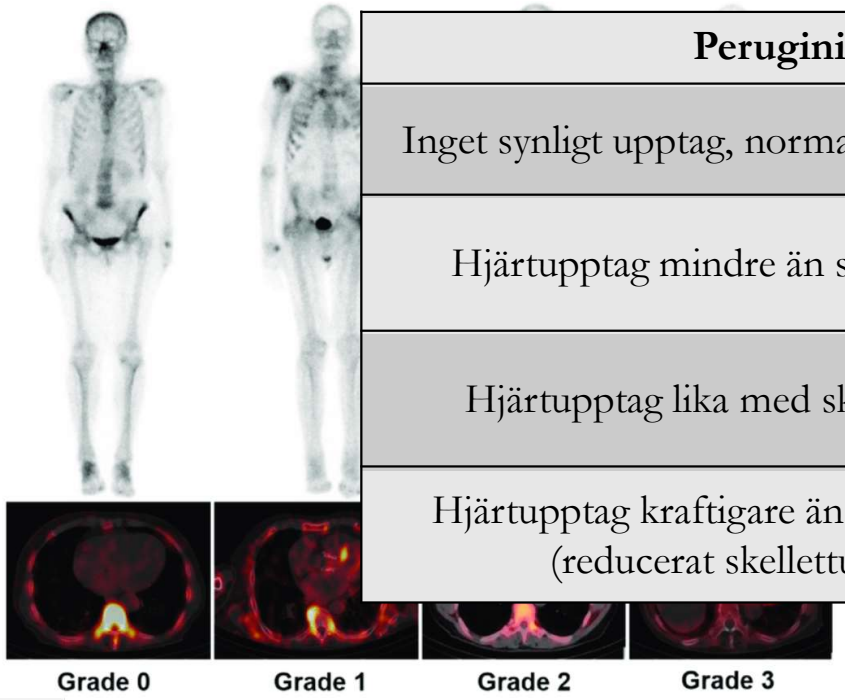
Bakgrund



https://my.clevelandclinic.org/health/diseases/22598-cardiac-amyloidosis

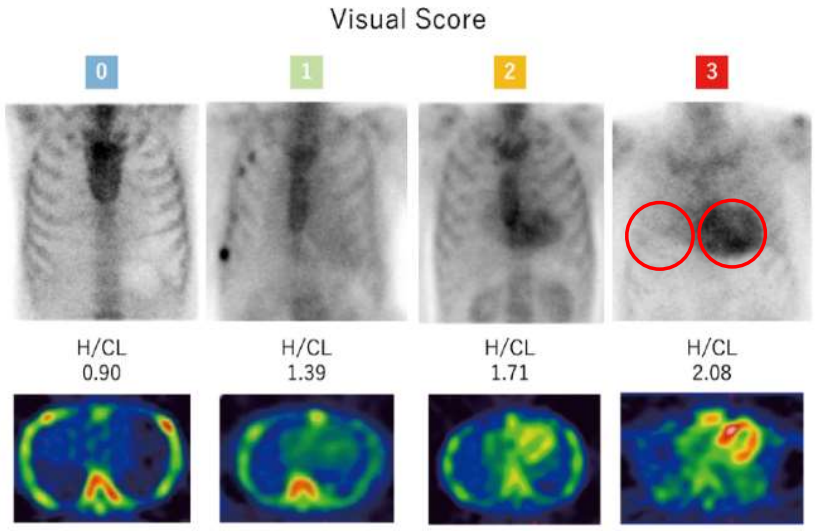
Perugini gradering (Planar + SPECT)



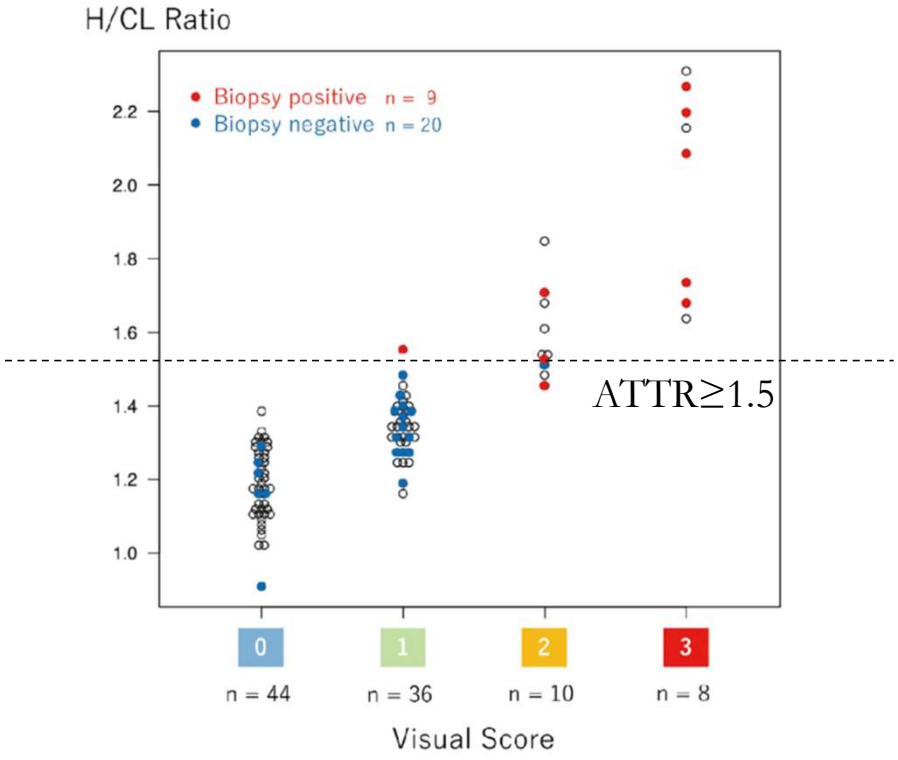
Perugini gradering	
Inget synligt upptag, normalt skellettupptag	Grad 0
Hjärtupptag mindre än skellettupptag	Grad 1
Hjärtupptag lika med skellettupptag	Grad 2
Hjärtupptag kraftigare än skellettupptag (reducerat skellettupptag)	Grad 3

Zhao, M., Calabretta, R., Yu, J., Binder, P., Hu, S., Hacker, M. and Li, X. (2022). Nuclear Molecular Imaging of Disease Burden and Response to Treatment for Cardiac Amyloidosis. *Biology*, [online] 11(10), pp.1395–1395.

Hjärta/kontralateral kvot (H/CL kvot)

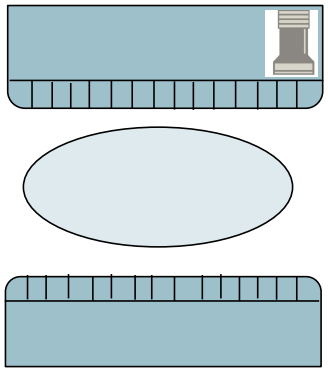


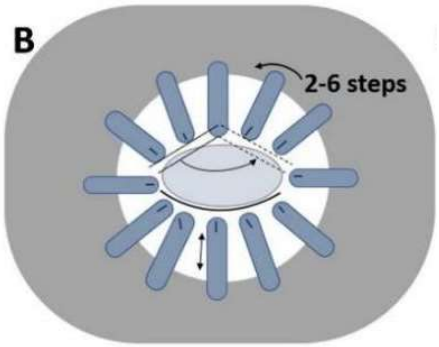
H/CL=medel counts hjärta/medel counts kontralateral

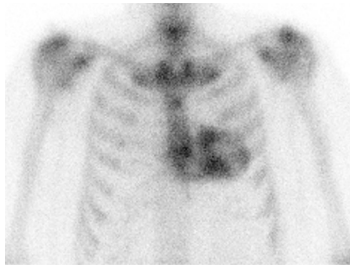


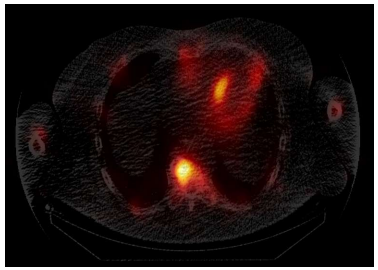
Tsutsui, Y., Kubota, T., Kato, S., Masatsugu Nozoe, Nobuhiro Suematsu, Okabe, M., Yamamoto, Y. and Tsutsui, H. (2019). Utility of ^{99m}Tc-Pyrophosphate Scintigraphy in Diagnosing Transthyretin Cardiac Amyloidosis in Real-World Practice. *Circulation reports*, 1(7), pp.277–285.

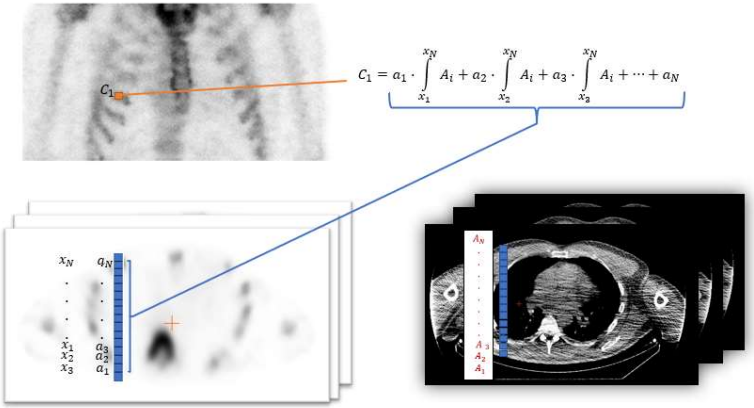
Bakgrund











Ceric Andelius I, Minarik D, Persson E, Mosen H, Valind K, Tragardh E, et al. First clinical experience of a ring-configured cadmium zinc telluride camera: A comparative study versus conventional gamma camera systems. Clin Physiol Funct Imaging. 2023

Metod

- 30 dubbelkörda patienter
  - 99mTc-DPD scintigrafi
  - 8 min bildtagning (planar/SPECT)
- Utvärdering
  - 3 läkare granskade:
    - Bildkvalitet
    - Perugini gradering
    - H/CL kvot
- Statistisk analys
  - Cohen's & Fleiss kappa
  - Linjär regression & Bland-Altman plot

Bildkvalitet	
Icke-diagnostisk	Grad 0
Dålig bildkvalitet	Grad 1
Acceptabel bildkvalitet	Grad 2
Bra bildkvalitet	Grad 3

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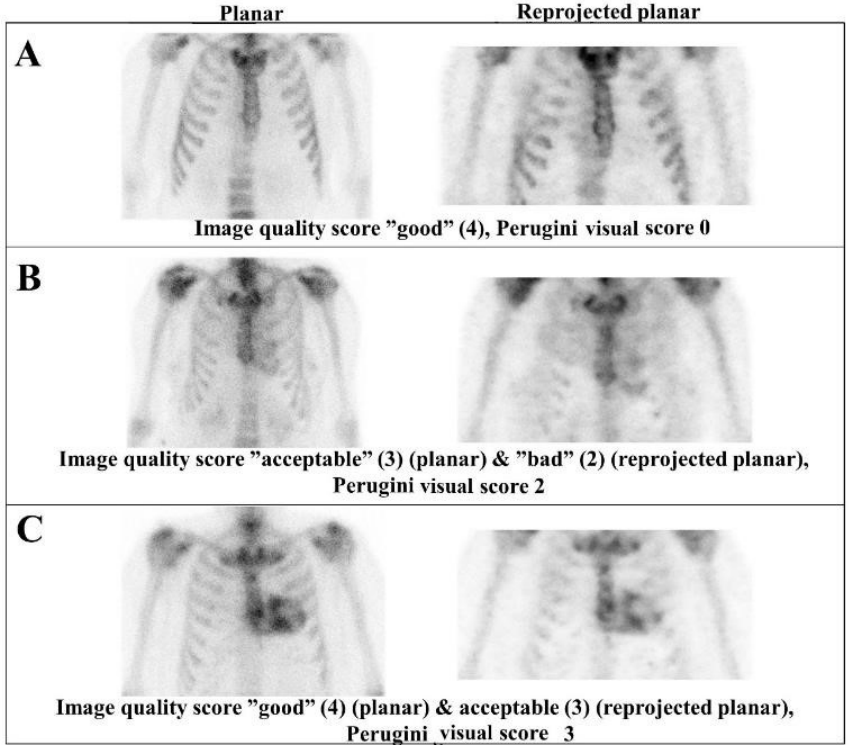
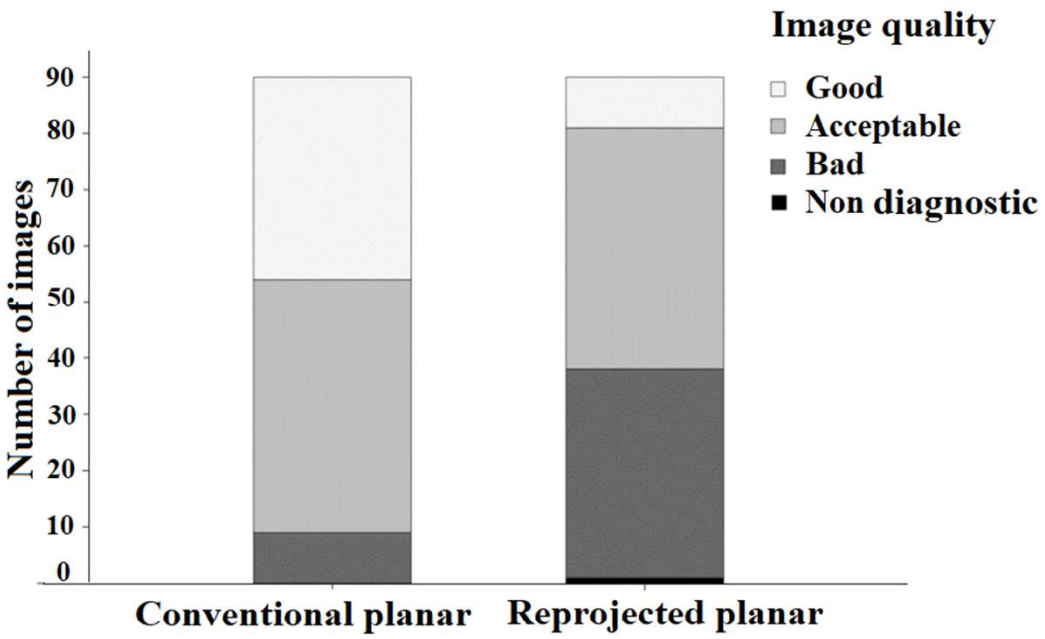
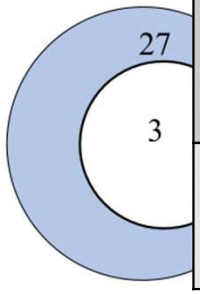
Resultat-bildkvalitet



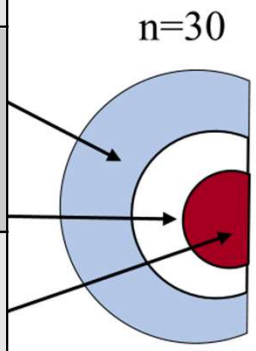


Accepted for publication European Heart Journal Imaging Methods and Practice

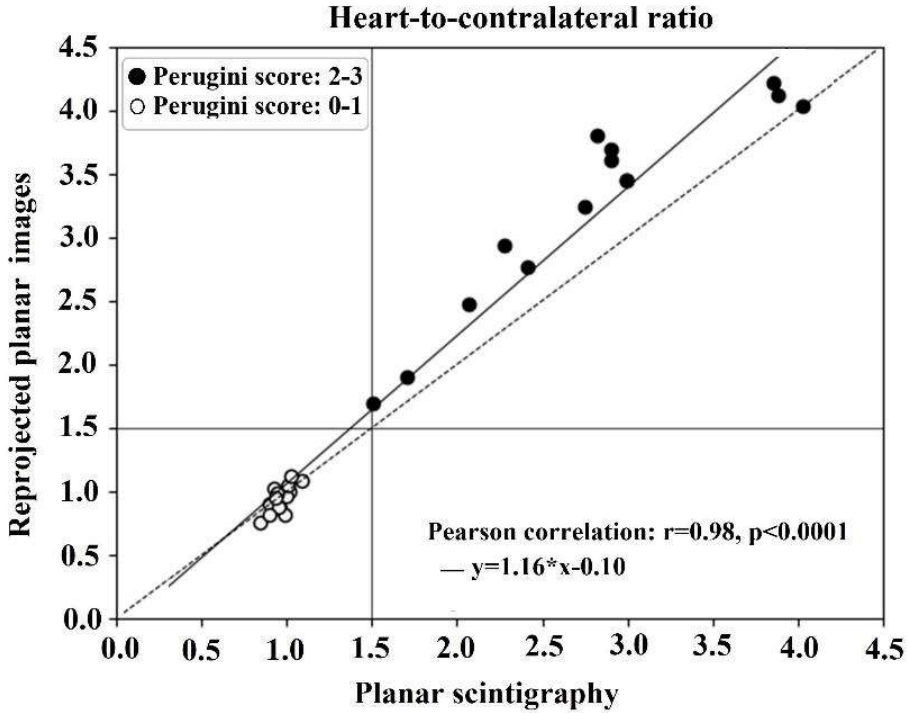
Resultat-Perugini gradering

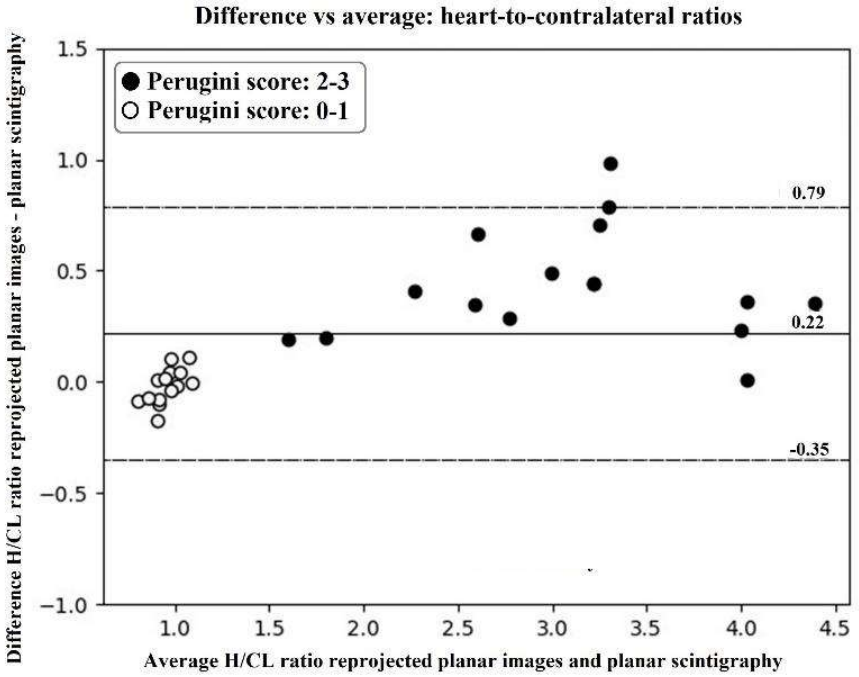


	FLEISS' KAPPA	95% CI	PERCENTAGE AGREEMENT [%]
PERUGINI VISUAL SCORE PLANAR SCINTIGRAPHY	0.88	0.75-1.00	90
PERUGINI VISUAL SCORE REPROJECTED PLANAR IMAGES	0.82	0.76-1.00	83



Resultat-H/CL kvot





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Slutsats

- **Återprojicerade planara bilder** kan användas för att diagnosticera **ATTR amyloidos**.
  - Bildkvalitet: Sämre i återprojicerade bilder
  - Perugini's visuella gradering: samstämmig och robust
  - H/CL kvot: Starkt positivt samband (r^2=0.96)

Tack!

Särskilt tack till mina kollegor på Skånes Universitetssjukhus, avdelning för klinisk fysiologi och nuklearmedicin, strålningsfysik och Lunds Universitet