

Results In total 692 consecutive procedures, 386CA (56%) and 306PCI (44%) were performed, 380 (55%) via RFA, 232 (34%) via RRA and 80 (11%) via LRA. The CD was lower in the RFA ($6.9 \pm 11.8 \mu\text{Sv}$ vs. RRA $26.4 \pm 54.1 \mu\text{Sv}$, $p < 0.001$, vs. LRA $9.9 \pm 18.5 \mu\text{Sv}$, $p < 0.001$).

There was no difference in the DAP between LRA and RRA ($34.4 \pm 23.8 \text{Gycm}^2$ vs. $40.3 \pm 28.5 \text{Gycm}^2$, $p = 0.13$).

The RFA demonstrated higher levels ($55.3 \pm 64.3 \text{Gycm}^2$) compared to both RRA ($p = 0.03$) and LRA ($p < 0.01$).

The adjusted ORE was significantly lower in the RFA ($0.17 \pm 0.27 \text{Sv/Gycm}^2$) compared to the RRA ($0.62 \pm 0.69 \text{Sv/Gycm}^2$, $p < 0.001$) or the LRA group ($0.30 \pm 0.36 \text{Sv/Gycm}^2$, $p < 0.001$), as was for the LRA compared to the RRA ($p < 0.001$).

Conclusions The RFA in CA and PCI is associated with significantly lower ORE when compared to the RRA or LRA. The LRA is associated with significantly lower ORE when compared to the RRA.

The author hereby declares no conflict of interest

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Updated reference levels for radiation doses to patients undergoing coronary angiography and coronary percutaneous interventions: the RAY'ACT2 study

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Purpose The RAY'ACT project is a nationwide, multicentre survey program aimed at evaluating patient radiation protection (RP) during coronary angiography (CA) and percutaneous coronary interventions (PCI) in French non-university public hospitals, which represent >30% of the national activity for PCIs, and 60% of the emergency cases. We present the updated reference levels based on the results of the second survey conducted in 2013 (RAY'ACT2).

Methods RP parameters from 48,547 CAs and 40,026 PCIs performed at 61 centres during 2013 and routinely registered in professional software were extracted and analysed retrospectively. Kerma-area product (KAP), fluoroscopy time (FT), number of acquired frames (Nb F) and runs (NR), and total Air Kerma at interventional reference point (KA, r) were analysed separately for CAs and PCIs (elective and ad hoc pooled). All procedures of the year were included.

Results The table shows the medians (Q1-Q3) of the RP parameters, updated RLs based on the 75th percentiles of the values for CA and PCI (bold), and previous RLs (RAY'ACT1, 2010).

Conclusions Between 2010 and 2013, a 20 to 30% decrease was observed in medians and Reference Levels (Q3) for main RP parameters, including KAP and total Air Kerma.

Abstract 0254 – Table: Results

	2013 (RAY'ACT2) 61 centres <i>N=48,547</i>	2010 (RAY'ACT1) 44 centres <i>N=31,066</i>
CA		
KAP (Gy.cm ²)	20.9 (11.8- 35.7)	27.2 (15.5- 45.2)
FT (min)	3.3 (2.1- 5.7)	3.7 (2.3- 6.3)
Nb Frames	404 (284- 566)	553 (388- 769)
KA,r (mGy)	294 (164- 498)	421 (240- 695)
PCI		
KAP (Gy.cm ²)	45.2 (25.6- 77.6)	56.8 (32.8- 94.6)
FT (min)	9.8 (6.3- 15.4)	10.3 (6.7- 16.2)
Nb Frames	676 (465- 960)	837 (578- 1193)
KA,r (mGy)	747 (421- 1285)	1052 (589- 1788)

The author hereby declares no conflict of interest

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Radiation in transfemoral versus transradial access in diagnostic coronary angiography

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Background/Introduction Although transradial access (TRA) is being increasingly used in interventional cardiology, there are concerns about a possible increase in radiation exposure as compared to transfemoral access (TFA).

Purpose The aim of this study is the comparison of radiation exposure parameters between coronary angiography procedures performed via left radial artery, right radial artery or femoral artery and the detection of factors that contribute to increased radiation dose.

Methods We analysed collected data on radiation exposure for a total of 733 consecutive diagnostic coronary angiographies (69% in men) excluded those concerning patients with aortocoronary bypass grafts or those accompanied by aortography or ventriculography. Dose area product (DAP) and fluoroscopy time (FT) were used as a means of radiation exposure measurement.

Results The mean patients' age was 66.8 ± 10.1 years and BMI $28.4 \pm 4.6 \text{kg/m}^2$. Femoral access was used in 45% of the procedures, right radial access (RRA) in 42% and left radial access (LRA) in 13%.

More diagnostic catheters were used via TFA than TRA (2.24 ± 0.63 vs 1.94 ± 0.83 respectively, $p < 0.001$); LRA was associated with the use of more diagnostic catheters than RRA.

TRA was associated with increased FT (4.8 ± 3.5 vs 3.1 ± 2.4 min, $p < 0.001$) but there was no difference regarding FT between RRA and LRA. Hypertension and the presence of ascending aorta aneurysm were predictors of increased exposure parameters, especially in TRA, whereas diabetes mellitus was predictor of increased DAP. The use of 1 or 2 diagnostic catheters was associated with reduced DAP and FT.

Conclusion TRA is associated with increased FT. Hypertension and ascending aorta aneurysm are adversely affecting exposure parameters. With TRA and especially RRA is feasible the use of fewer diagnostic catheters in patients undergoing diagnostic coronary angiography.

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Association between low bone mineral density and coronary artery disease

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Background Many studies describe a relationship between brittle bones and cardiovascular disease.

The physiopathology may be explained by the osteoprogenin (OPG) that protects the vascular wall and inhibits the RANK-RANKL system which is a strong inhibitor of osteoclasts. Thus it seems interesting to assess the prevalence of osteoporosis and osteopenia in patients with a confirmed coronary heart disease.

Material and Methods This study enrolled 46 patients who underwent a coronary angiography for chest pain. We identified two groups of patients:

- Group 1: patients with significant coronary artery disease.
- Group 2: patients with normal coronary angiography.

All patients had a physical exam, a phosphocalcic investigation and bone mineral density (BMD).

Results The mean age of the population was 66.7 ± 6.5 years old. 52.17% were women. Among the 46 patients, 21.7% had an osteoporosis, 41.3% an osteopenia and 37% had a normal bone mineral density. 52% des 52% of the studied population had significant coronary artery disease, 48% had a normal coronary angiography. At the statistical analysis, prevalence of osteoporosis and osteopenia was significantly higher in group 1 than in group 2 ($p < 0.001$).