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Management of stable coronary artery disease patients: Very efficient for a population but probably insufficient for every single patient. The Indyce survey

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Background: In studies and surveys involving stable coronary artery disease (CAD) patients, the global population often seems well managed; however, the question remains to know what is the proportion of patients who benefit from every simple medical intervention improving the prognosis or showing good quality of care.

Objective: To evaluate medical management of stable CAD outpatients in France by calculating a progressive quality index.

Methods and Results: The INDYCE survey was conducted in a sample of 343 cardiologists in France in 2008. Each physician had to include consecutively 10 stable CAD patients (absence of acute coronary syndrome or revascularisation in the 6 months preceding enrolment).

3119 patients (male: 80 %, 68 ± 11 years old, diabetes: 24.3 %, hypertension: 61.6 %) were enrolled.

Medical therapy was in keeping with Guidelines (antiplatelet agents (AA) : 88.4 % ; statins : 85.9 % ; ACE-I/ARBs : 78.8 %, beta-blockers (BB) : 74.6 %). Patients suffered from mild to moderate symptoms (angina : 19.2 %, NYHA class 0 or I : 43.5 %, NYHA class II : 46.9 %, NYHA class III : 9.3 % ; NYHA class IV : 0.3 %). Mean rest heart rate (HR) was of 64.2 ± 10.8 bpm, mean systolic and diastolic blood pressure (BP) of 131.8 ± 15.4 and 75.8 ± 8.4 mmHg respectively.

However, when calculating a progressive quality index:
(1) 44.69 % of the patients received an AA + a statin + an ACE-I/ARBs + a BB
(2) 29.79 % had (1) and a systolic BP < 140 mmHg + a diastolic BP < 90 mmHg
(3) 23.02 % had (1) + (2) and a resting heart rate < 70 bpm
(4) 12.6 % had (1) + (2) + (3) and had a regular physical activity
(5) 6.96 % had (1) + (2) + (3) + (4) and had performed an exercise test during the last 12 months
(6) 4.07 % had (1) + (2) + (3) + (4) + (5) and were asymptomatic (no angina and NYHA class 0 or I)

Conclusion: Stable CAD patients do not raise attention because they are often pauci-symptomatic. At a population level, they appear to be well managed. However, building a quality index allows us to show that very few of these patients benefit from every step of a simple medical management.

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Risk assessment for radiation-induced cancer after Interventional Cardiology procedures

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The increased use of interventional cardiology (IC) procedures, while providing important benefits to patients, also contributes to their radiation exposure. Radiation is a relatively weak carcinogen and demonstrating a radiation-induced cancer risk remains difficult. Only very crude results of lifetime risk assessment of cancer after IC procedures have been presented elsewhere, but the age distribution of population, technical procedures actually applied and target organs are also important to consider.

Based on a previous detailled description of clinical features and dosimetric data (absorbed organ doses: lung and bone marrow) of an adult French population undergoing IC procedure, and the latest radiation risk models (BEIR VII), a specific risk assessment for lung cancer and leukaemia mortalities was realized.

We considered patients having undergone either a coronary angiography or cumulating coronary angiography and angioplasty, at age 40-75 years, and followed until 85 years. Based on different scenarios of radiation exposure and delivered-doses, the number of deaths from lung cancer or leukaemia due to radiation per 1,000 general population spontaneous lung cancer or leukaemia deaths respectively, was estimated. Preliminary results show that the risk of specific radio-induced cancer in patients undergoing IC procedure exists even if it remains relatively limited. Moreover, depending on patients' age and type of IC procedure, additional procedures appeared to increase the lifetime risk estimates.

This study provides evidence of the potential radio-induced cancer risk in IC. The limitations of such calculations are due to the difficulty to take into account patients' possible shorter life prognosis than in general population, partly explained by comorbidities and coronary disease. Because of numerical evolution of IC procedures, interventions to promote delivered-doses optimization and "ALARA" requirements may prevent or limit this risk.

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Implementation time of a lipid lowering therapy in patients with dyslipidemia: results of Prysme study

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Despite the availability of specific guidelines, the management of dyslipidemia in practice is not optimal.

Objective and methodology: PRYSME, a non-interventional multicentre study carried out with 1226 general practitioners, aimed to describe the implementation time of a lipid lowering treatment according to cardiovascular risk level (primary objective) and to identify its determinants. Were eligible patients treated for a dyslipidemia diagnosed less than 2 years ago. Demographic and clinical characteristics and circumstances of diagnosis and treatment initiation were collected.

Results: 3268 patients were included (mean age: 57 years old, males: 64%). 26% were obese and 45% overweight.Only 12% had no cardiovascular risk factors (CRF) at the time of dyslipidemia diagnosis. The most frequent CRF were arterial hypertension (50%), smoking (43%), family history of premature coronary heart disease (28%), HDL-c <0.4g/l (20%) whereas 15% of the patients had a personal history of cardiovascular disease. Dietary programs were initially implemented for 98% of the patients. More than 90% were treated with a statin. The implementation time of the treatment (evaluated according to the biological confirmation of dyslipidemia), according to the initial number of CRF, was as following:

	0 CRF	1 CRF	2 CRF	≥ 3 CRF	Secondary prevention	Total
[-3;0] months	34.3%	28.6%	27.1%	29.3%	49.1%	33.1%
]0;3] months	23.1%	26.2%	26.4%	24.0%	21.9%	23.9%
> 3 months	42.6%	45.3%	46.5%	46.8%	29.0%	43.0%

Chi-2 test : P<0.001

The main determinant of an early implementation of a lipid lowering therapy (≤ 3 months) was secondary prevention (OR=1.8). The number of CRF had no significant impact.

Conclusion: This study underlines the lack of awareness towards cardiovascular risk factors in the management of dyslipidemia, particularly while considering the implementation time of a lipid lowering therapy.

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Dysmetabolic profile in patients with established coronary heart disease

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Purpose: Current guidelines recommend lowering LDL-cholesterol below 2.6 mmol/L in patients with established cardiovascular disease. The potential benefit of an additional decrease in LDL-cholesterol has been suggested for coronary heart disease patients with diabetes or dysmetabolic profile, as they are at high risk of recurrence. The aim of this analysis was to estimate the proportion of patients with poor metabolic profile among those with established coronary heart disease.

Methods: A sample of French male patients with a history of acute coronary syndrome was recruited from 2001 to 2004. Those with recent (in the past two months) acute coronary syndrome were excluded.

Results: The sample comprised 824 men. Mean age was 60.3 years (standard deviation: 7.9), 22% of patients were still current smokers and 65% had high blood pressure (≥ 140/90 or 130/80 mmHg if diabetes). Diabetes was encountered in 32% of patients (20%, 36% and 38% from the 10-year age group 45-54 to 65-74 years, respectively, p<0.0001), low HDL-cholesterol (< 1 mmol/L) was observed in 42% (48%, 43%, 36%, p=0.021), high triglycerides (≥ 1.7 mmol/L) in 48% (58%, 49%, 38%, p<0.0001), and high non-HDL cholesterol (≥ 3.4 mmol/L) in 74% of patients (84%, 77%, 64%, p<0.0001). The combination of high non-HDL cholesterol and high triglycerides which reflects the atherogenic potential associated with remnant lipoproteins was encountered in 42% of patients (54%, 42%, 31%, p<0.0001) and 24% (32%, 24%, 17%, p<0.001) had a dysmetabolic profile (low HDL-cholesterol plus high non HDL-cholesterol and elevated triglycerides). Overall, 48% of patients (47%, 50%, 48%, p=0.706) presented either with diabetes or dysmetabolic profile, and thus should be considered at very high risk.

Conclusions: These data suggest that almost one half of patients with established coronary heart disease could be at very high risk, and may thus require a more intensive strategy to control lipids and to reduce global cardiovascular risk.

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Trends in plasma lipids, lipoproteins and dyslipidemias in French adults, 1996-2007

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Background: The management of dyslipidemias remains a priority of preventive cardiology. The aim of this work was to assess lipids, lipoproteins and dyslipidemias trends between 1996 and 2007 in France.

Methods: Two representative surveys of the general population were carried out in Northern, in North-Eastern and in Southwestern areas of France in 1996-97 (n=3508) and in 2006-07 (n=3597). Men and women aged 35 to 64 years were included. The investigators recorded all the cardiovascular risk factors and a blood sample was drawn. Data have been rectified with the respective original populations to study a 10-year trend in the measured parameters.

Results: From 1996 to 2007, a significant 5.7% decrease in LDL-cholesterol (C) levels was observed in adults aged 35-64 years (p<0.001). During this same period a significant 7.8% increase in triglycerides was observed (p<0.001). LDL-C variation was more striking in subjects treated with a lipid-lowering drug, with a 17.6% reduction (p<0.001). Lipid-lowering drug prevalence increased significantly from 10.4% to 12.5% between the two periods (p=0.004). In 1996-97, 33.7% of the dyslipidemic subjects were treated with statins and 71.8% in 2006-07. In 2006-07, atorvastatin was the most commonly prescribed statin (35.8% of all statins) whereas the most common fibrate was fenofibrate (87.2% of all fibrates). A decrease in most of dyslipidemias (LDL-C >4.1 mmol/L or triglycerides ≥2.3 mmol/L or HDL-C <1.05 mmol/L in men or <1.3 mmol/L in women) has also been observed at a 10-year interval. On the other hand, we observed a significant increase in the combination of hypertriglyceridemia with high LDL-C.

Conclusion: This study shows a favorable trend in LDL-C and dyslipidemias in France. The significant decrease in LDL-C observed among all the subjects and more particularly among subjects treated with lipid-lowering drugs should be incentive for physicians to support the management of all adults.

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Antimicrobial prophylaxis before defibrillator and pace-maker implantation : a retrospective study

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Background: the implantation of pace maker or defibrillator expose to the risk of infection of these devices. The use of antimicrobial prophylaxis before implantation is not clearly recommended, because there are only few studies that establish its benefit.

Patients and methods: we conducted a retrospective case control study between 2004 and 2007, to determine the risk factor associated with infection, especially if the administration of an antimicrobial prophylaxis is associated with decrease of devices infection. Inclusion criteria were following: presence of wound inflammation, or device externalisation, and Klug's modified Dukes criteria for endocarditis. All micro-organisms results from deep wound sample or blood culture.

Results: 979 patients had a non valvular cardiac device during the study period. 34 of them developed infectious complication (incidence 3.5 %) : 19 local infections, and 15 endocarditis. 70 patients constituted the age and sex matched control population. Staphylococcus was isolated in 88 % of the cases. 27 % of them were S. aureus. 53 % of Staphylococcus were resistant to meticillin. The risk factors associated with infection were following : number of surgical interventions related to the cardiac devices (p < 0.001), early wound inflammation or hematoma (p < 0.001), INR or partial thromboplastin time ratio > 1.5 the day of implantation, fever before implantation (p< 0.001), more infections after defibrillator implantation vs pace maker (p = 0.03) and absence of antibioprohylaxis (p = 0.03). Antibioprophyxis were in majority of case intra venous cephalosporin (16/17).

Conclusion: antibioprophylaxis and surveillance of anticoagulation could be helpful to prevent infection after cardiac devices implantation; prospective studies could be interesting to confirm these results.

Table. Risk factors for cardiac device infection

Risk factors for infection	p
Number of surgical operation related to cardiac device	p<0.001
Early wound inflammation or hematoma	p<0.001
INR or partial thromboplastin time ratio > 1.5	p<0.015
Fever before implantation	p<0.001
Defibrillator implantation versus pacemaker	p=0.03
Absence of antibioprophylaxis	p<0.03