LETTERS TO THE EDITOR

doi:10.1093/eurheartj/ehn370
Online publish-ahead-of-print 16 August 2008

Psychology, cardiology, and gender

A meta-analysis of data on a 2 year psychological treatment in patients following a cardiac event performed by Linden et al. found no benefit on morbidity and mortality in women. Speculation included higher prevalence of obesity, physical inactivity and major depression, lower levels of social support and higher marital stress in women, and different coping mechanisms. In an accompanying correspondence, Linden et al. additionally hypothesized that male coronary patients may experience greater benefit from the psychological treatment because of the objectively worse prognosis of other subgroups, including heart failure patients.

Beyond the aforementioned factors, a body of evidence suggests that some constitutional gender differences may expose women to the adverse effects of psychological factors. The differences mainly relate to situational cardiovascular reactivity and triggering mechanisms of an acute event and could help explain the particular lack of effect on mortality in the present meta-analysis.

Late middle-aged and elderly women are more likely to have a more pronounced acute haemodynamic response to a mental stress expressed by greater rise in heart rate, blood pressure, cardiac output, and systemic vascular resistance. The greatest response, independent of hypertension or antihypertensive therapy, was observed in socially phobic women, compared with non-phobic women as well as with their male counterparts. Interestingly, in socially phobic men, the response seems not to differ from non-anxious men. Then, clinical data suggest that women may be more subject to emotional triggering of acute events such as apical ballooning syndrome, and perhaps acute coronary syndrome.

A possibility that gender differences reach the basic mechanisms of atherogenesis is rather speculative. There is an observation that depression was a predictor of ischaemic heart disease in women but not men with insulin-dependent diabetes. Moreover, a finding that the subordinate females of cynomolgus monkey species develop more progressed atherosclerosis than non-stressed females implies that important differences could be found both between and within gender.

Additional work is needed to determine whether women are biologically more prone to the adverse cardiovascular effects of psychological factors. Further possibility is that such effects are more difficult to treat and influence in women. Regarding that both psychotherapeutic and psychopharmacological treatments should be investigated. For example, we observed a protective effect of anxiolytics against emotional and other external triggering of ventricular tachycardia confined to men, with no significant effect seen in women.

Linden et al. are to be commended for their well-done research. In the future, several substantial issues must be thoroughly explored. A secondary analysis of the MIND-IT clinical trial showed the much greater 18 month incidence of cardiac events among depression treatment non-responders than responders (23.6 vs. 7.4%). Also recently, the short allele of the serotonin transporter polymorphism has been associated with both depression symptoms following a myocardial infarction and subsequent cardiac events. Identification of subpopulations at higher risk according to cardiovascular disease, gender, cardiovascular reactivity, treatment responsiveness, psychological and genetic profile may get us closer to more targeted psychological interventions and improved survival of cardiac patients.

References


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doi:10.1093/eurheartj/ehn394
Online publish-ahead-of-print 4 September 2008

Operator vs. patient radiation exposure in transradial and transfemoral coronary interventions

We were interested by the recent report from Brasselet et al. measuring radiation exposure to patients and operators after transradial and transfemoral coronary diagnostic and interventions. In brief, they showed that using standard leaded glass and flaps, transradial procedures were associated with higher patient and operator radiation exposures. In the light of these findings, they concluded that ‘radial route indication should be promptly reconsidered’.

Before...
such conclusion can be drawn, we would like to make the following comments:

(1) Transradial approach has been initially described more than 15 years ago and it has become popular mainly outside US. Today, it is the best method to minimize the risks of access site complications and bleeding after percutaneous coronary interventions (PCIs).

(2) Bleeding post-PCI is a dreadful consequence, which increases acute morbidity and mortality, prolongs hospitalization, and costs millions to health systems. Major bleeding post-PCI is now recognized as a strong independent predictive factor of mortality. Patients at higher risk of bleeding are also those who benefit the most from transradial approach.

(3) Clinical scenarios associated with increased risk of bleeding such as primary and rescue PCI were excluded from Brasselet’s study.

(4) Transradial approach has also permitted the development of outpatient PCI practice even when maximized anticoagulation and high-risk patients are involved.

(5) Basically, similar to other previously published reports, this report shows that longer fluoroscopy time is associated with increased patient and physician exposure. Since patients are not exposed several times, the remote stochastic and non-stochastic risks associated with transradial approach remain negligible and certainly should not be weighted against the immediate risks of bleeding and/or access site complications.

(6) We fully agree with the authors that radiation exposure is an important issue most of the time under-evaluated by most operators. Although the authors claim optimized radiation protection, we notice that there is no mention of operators wearing leaded glasses nor are they visible on their pictures. Cataract is a non-stochastic risk, which means that the incidence would presumably be close to 100% if the operator reaches a certain threshold. In our institution, where transradial approach has been the default technique for the last 14 years, operators perform about 1000 diagnostic catheterizations and 200–300 PCI cases/year and have been strongly advised to wear leaded glasses (still not all operators wear them!). By keeping annual eye exposure below the recommended 150 mSv, a cardiologist could therefore work for more than 35 years before reaching the cataract threshold.

(7) From Figure 2, it appears that most of the difference in radiation exposure results from the diagnostic part. Indeed, difficulties in catheter progression through the arm and/or subclavian part can lead to additional fluoroscopy and is, however, recommended to avoid potential arterial damages. Thus, the practice of ad hoc procedures compared with diagnostic and PCI in separate procedures has an important role in limiting patient and staff exposure.

(8) Once the transradial approach becomes a common practice, there are several tricks that can help to reduce radiation exposure like exchanging catheters over wire placed in the ascending aorta without using fluoroscopy.

In conclusion, transradial approach has been a major step forward in the practice of percutaneous coronary angiography and PCIs to the benefit of all patients. Tremendous improvements in radiation protection measures have been associated with dramatic reduction in patient and staff radiation exposure over the last decade. It is time for ‘radialists’ to discuss with radiation protection specialists and the industry further means to reduce staff radiation exposure and hence, the associated risks.

References

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Adiponectin and prognostic outcome in patients with coronary artery disease
von Eynatten et al. prospectively evaluated the prognostic impact of total and high-molecular weight adiponectin in 1051 German patients with stable coronary artery disease (CHD) at baseline after a median follow-up of 4.7 years, and found no association with incidence of secondary cardiovascular (CV) events. This finding is paradoxical because adiponectin can exert anti-atherogenic, anti-inflammatory, and insulin-sensitizing effects, and contrast with findings in CHD patients with no or limited adjustment for potential confounders. We performed a study on 712 very similar (for age, gender, prevalence of diabetes mellitus, overweight, and history of hypertension) coronary artery disease (CAD) Italian patients,