Current issues and controversies in breast imaging

Kate Brown, South GP CME 2015
JUDICIOUS USE OF RESOURCES IN REFERRALS FOR BREAST IMAGING
THE DILEMMA

How do target referrals for breast imaging?

Want to minimise “delayed diagnosis” and reassure the “worried well”,

yet at present the Ca detection rate among “symptomatic” women in Canterbury is lower than in the screening programme.
RED FLAG SYMPTOMS

- Discrete breast or axillary lump, ulceration, skin dimpling, breast distortion
- Persistent nipple eczema, ulceration, recent (< 3 months) nipple retraction or distortion
- Bloody or serous unilateral nipple discharge (green or yellow discharge is not a red flag)
- Inflammation not responding to treatment (consider inflammatory breast cancer)
- Repeated consultation about the same breast symptoms
Breast Pain

International guidelines do not support imaging for women presenting with breast pain as only symptom.

Focal pain in older woman is exception
Review of local cases (2009 - 2013) - Pain

8/1681 cancers (0.4%) were referred as pain only (data reviewed for 6 treated at CPH)

All had palpable abnormality at first surg appt.

5 out of 6 were >65 years
Review of local cases (2009 - 2013) - cancer in women 40 years and younger

36% of referrals for imaging are in this age group
2.8% of cancers (48 cancers of which 8 in 20 - 30 yrs old)
40/48 (83%) presented with lump
2 had palpable axillary nodes
4 had “thickening”
1 detected at screening
1 presented with metastases
discussion

How can we make better use of resources?
Benefits and harms of screening

The Truth?
Breast Screening

Figures suggest that we are identifying cancers that would not otherwise have presented during a woman’s lifetime,

BUT
but

We have an incomplete understanding of the natural history of breast cancer, in particular “lead time”.

The demonstrable benefit may increase as programmes mature.
There is clear evidence that regular mammographic screening reduces mortality, mastectomy rates, extent of axillary surgery and adjuvant therapy.

How do we decide where cost:benefit balance lies?
BUT

Breast cancer is histologically heterogeneous. As yet we do not have markers to identify which cases might safely be left. International community is actively seeking to move forward on this. Trial of surveillance vs surgery in UK “LORIS”
BREAST DENSITY

Effect on breast cancer risk and detection at mammographic screening
KEY ISSUES

Relative risk of breast cancer associated with dense breasts

Masking of cancers by overlying tissue at mammography

Efficacy, benefits and harms of supplementary screening tests
“DENSITY”

Refers to radiographic density
= the extent to which tissue absorbs X-rays

Denser breasts have more glandular tissue in proportion to other (fatty) parts of the breast. More of the mammogram is white rather than grey.

Increased density gives increased risk of cancer and increased likelihood of masking (Ca not being visible).
Relative Risk

The 10% of women with extremely dense breasts have a 2.1 x greater risk than those with average density.

The 40% of women with heterogeneously dense breasts have a only a 1.2 x greater risk.

Risk for extremely dense breasts is approximately the same as for one 1st degree rel with postmenopausal Ca (not a group usually eligible for additional screening).
Masking of lesion on mammogram

Sensitivity for breast cancer detection is reduced by 13% for the extremely dense breasts (c.f. average density) and 7% for the heterogeneously dense.

Masking is more important than increased risk.

But other factors, such as BRCA gene, personal history of Ca have a greater effect on lifetime risk.
Screening options

Mammography is the only modality proven to reduce mortality in RCTs.

Use of ultrasound as a screening tool on its own is not supported by evidence. Use as an adjunct to mammography is controversial, with “false positives” outweighing “true positives” in many contexts.

Use of MRI is justified if lifetime risk is >20%, breast density may contribute to a calculation of this in the future.

Trials are being carried out in Europe.
Conclusions

For women not at high risk, including those whose only risk factor is high density, the pretest probability of breast cancer is low, so the benefits of supplementary screening will be low, whereas drawbacks will be the same, or possibly higher.

In the future, women at moderate risk might find that the presence of extremely high breast density may add risk sufficiently to justify additional screening with MRI.