Impact of sentinel node biopsy on quality of life in the ALMANAC trial.

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Background

- Arm morbidity following both axillary clearance and sampling is well-documented. Problems such as muscle weakness, stiffness, numbness, impaired mobility, pain and lymphoedema are common and impact on Quality of Life (QoL).
- The Axillary Lymphatic Mapping Against Nodal Axillary Clearance Trial (ALMANAC) is a UK based multi-centre RCT of patients with clinically node negative breast cancer in which sentinel node biopsy (SNB) is compared with conventional axillary surgery (standard treatment).
- The putative benefits of SNB are reduction of unnecessary resection and less arm morbidity without sacrificing staging accuracy.
- Traditional objective measures of arm morbidity may fail to capture the extent of problems, so patient self-report of QoL is an important outcome.
- This is the first large multi-centre prospective RCT comparing sentinel node biopsy with standard axillary treatment, which includes comprehensive QoL assessment.

Objective

- To compare QoL and anxiety between patients allocated to either sentinel node biopsy or standard axillary surgery.

Methods

Questionnaires

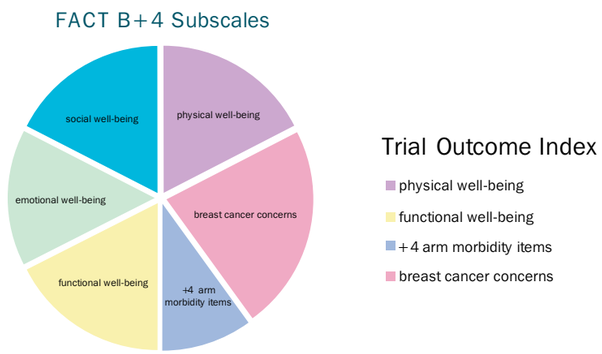
- Questionnaires were administered prior to randomisation (baseline) at the 11 participating centres. Follow-up questionnaires were mailed to participants 1, 3, 6, 12 and 18 months post-surgery.
- Consenting patients completed 2 questionnaires. Anxiety was assessed using the Spielberger State/Trait Anxiety Inventory [1]. Quality of Life was assessed using the Functional Assessment of Cancer Therapy-Breast +4 instrument (Fact-B+4) [2, 3].
- Fact-B+4 is a comprehensive measure of QoL comprising 5 subscales: physical, social, emotional, functional well-being and concerns specific to patients with breast cancer. Responses are measured on a 5 point Likert scale (very much, quite a bit, somewhat, a little, not at all).
- The +4 version of Fact-B includes additional items permitting more comprehensive assessment of arm morbidity.

Arm Morbidity Items on FACT-B+4

- One or both arms are swollen and tender
- Movement of my arm on the operated side is painful
- I have a poor range of movements on my operated side
- My arm on the operated side feels numb
- I have stiffness of my arm on the operated side

Endpoints

- The primary endpoint was the Trial Outcome Index (TOI), a summation of the breast cancer concerns, arm morbidity, physical, and functional well-being subscales.
- Secondary endpoints included total FACT-B+4, total arm morbidity and individual arm symptoms.



Participants

- 829 patients are currently enrolled. We report an interim complete case analysis of 576 who have reached 18 months of follow-up.

Characteristics of randomised patients (complete cases)

	Standard Treatment % (n=285)	Sentinel Node Biopsy % (n=291)
Sex		
Female	**99** (284)	**99** (290)
Male	**0.4** (1)	**0.3** (1)
Age groups		
<50 years	**18** (51)	**15** (44)
51-60 years	**39** (111)	**39** (112)
61-70 years	**32** (90)	**35** (103)
>70 years	**11** (33)	**11** (32)
Primary Surgery		
Wide Local Excision	**91** (258)	**93** (270)
Mastectomy	**9** (27)	**7** (21)
Axillary Node Status		
Positive	**20** (57)	**19** (56)
Negative	**80** (228)	**81** (235)

Results

- The standard treatment and SNB groups were closely matched with respect to patient and clinical characteristics.
- Trial Outcome Index (Fig 1) and total FACT-B+4 scores showed a greater decline for the standard treatment group compared with the SNB group 1 month post-surgery ($p<0.001$) and at each time point thereafter at 3,6,12 & 18 months ($p<0.03$).
- Arm-morbidity (5 item subscale) scores showed a greater decline for the standard group compared with the SNB group at 1,3,6,12 &18 months post-surgery ($p<0.001$).
- Unremitting swelling (Fig 2) and numbness (Fig 3) were prominent features for those who had conventional surgery. More patients in the standard surgery group experienced substantial swelling and numbness than in the SNB group at 1,3,6,12 ($p<0.001$) & 18 months ($p<0.007$) post-surgery.
- There were no significant differences in state anxiety between groups.

Fig 1: Trial Outcome Index (mean scores and s.e.)

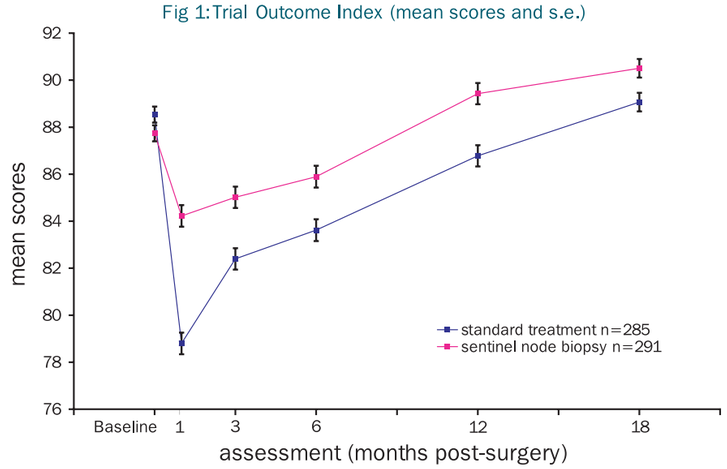


Fig 2: 'One or both arms are swollen or tender'
(patients reporting a substantial problem)

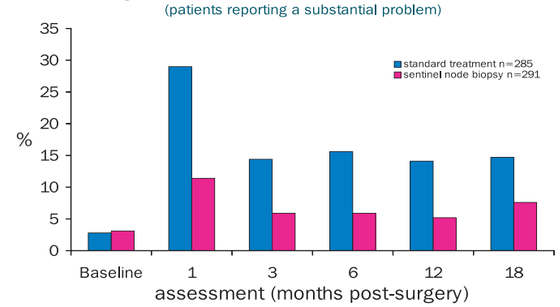
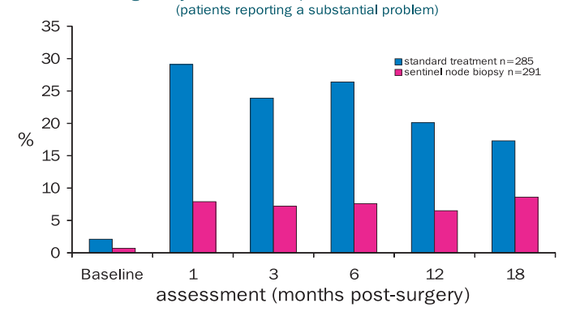


Fig 3: 'My arm on the operated side feels numb'
(patients reporting a substantial problem)



Conclusions

- Interim analysis with 18 months follow-up shows QoL to be superior and arm morbidity lower in the patients randomised to sentinel node biopsy compared with those randomised to conventional axillary surgery.
- These benefits are achieved without any significant increase in anxiety.
- These data were analysed on an intention-to-treat basis, thus the magnitude of benefit in favour of sentinel node biopsy amongst node negative patients is much greater.
- These results should contribute to sentinel node biopsy becoming standard procedure.

References

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