The OnControl Powered Bone Marrow Device: an Audit of Patient Outcomes for 79Patients in Birmingham

H. Siddiqi[1], M Marwah[2]

[1] Department of Haematology, Sandwell and West Birmingham Hospitals NHS Trust, Hallam Street, West Bromwich, B71 4HJ, UK

[2] Aston Medical School, Aston University, Gosta Green, Birmingham, B4 7ET, UK,

INTRODUCTION

Bone marrow aspirations and biopsies are critical for the diagnosis and surveillance of numerous disorders of haematopoiesis. The traditional method employs the use of an aspirate and trephine needle to take samples which provide important insight into various aspects of bone marrow function. The OnControl is a battery powered bone marrow biopsy system designed to take faster and obtain better biopsy samples while causing less anxiety than the manual procedure. Despite NICE review in 2015 and CE approval in 2005 the device has not gained much traction in various UK Trusts which employ the manual method.

AIM

Within our trust we initiated a trial to determine patient attitudes towards the OnControl system.

We wanted to evaluate quality of samples.

The secondary aim was to evaluate quality of samples as well as cost savings.

METHOD

We included 79 patients of which 32 were female and 47 were male.

Five key indicators were used to assess outcomes:

1) Patient anxiety, assessed by qualitative patient questionnaires;
2) Trephine length,
3) Success of trephine analysis,
4) Success of aspirate analysis
5) Total time for trephine and aspirate procedure.

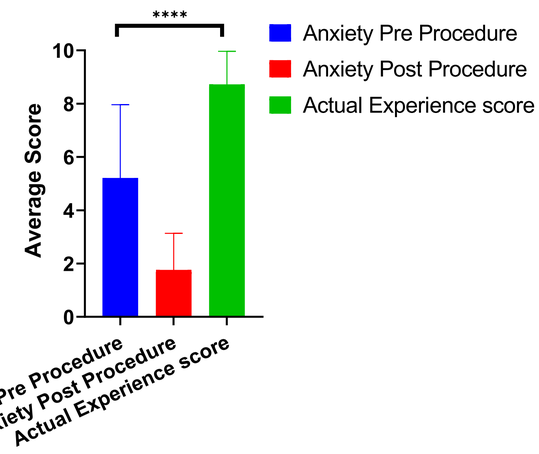
All patients gave their consent at the time of the biopsy.

On-site training was provided by Teleflex.

RESULTS

Patient post anxiety score was much lower than that pre-procedure suggesting the actual experience was able to assure the patient and reduce the anxiety/worry associated with the procedure. Patient pre-procedure anxiety was 5.2 ± 2.7, actual experience score was 8.7 ± 1.2, post-procedure anxiety was 1.7 ± 1.3 (where 10 describes high patient anxiety and 1 describes patients feeling comfortable and not anxious).

Figure 1:Patient post anxiety score was lower than that pre-procedure suggesting the actual experience assured the patient and reduced the procedure associated anxiety n=67.



The trephine length obtained from both the new procedure was compared, the median values was 15 (10-20) mm respectively. In terms of the trephine analysis, 93% were successful using the OnControl device.

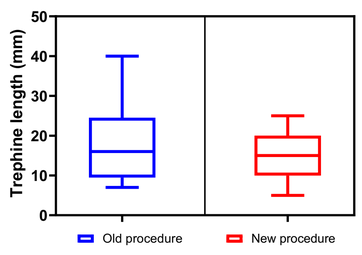


Figure 2: Trephine length is comparable in the new procedure vs the old.

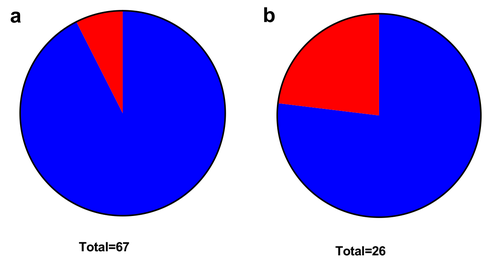


Figure 3: Trephine analysis was more successful in terms of giving results using the OnControl device a) new procedure, b) old procedure

In terms of the aspirate analysis 97% of procedures were successful using the OnControl device. The total time taken for each of the trephine and aspirate procedure was 17min.

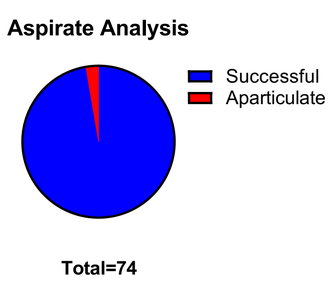


Figure 4: Aspirate analysis using the OnControl device gave a 97% success rate

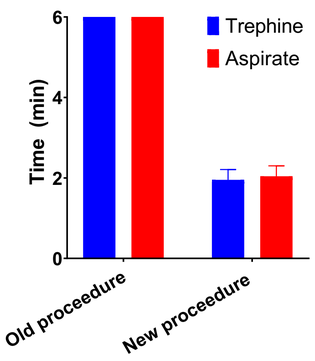


Figure 5: The total time taken for trephine and aspirate procedure using the OnControl was less compared to an average of time taken using the standard method

CONCLUSIONS

- The use of the OnControl device seemed to improve patient experience as it was able to alleviate patient anxiety post procedure.
- The trephine length was considered acceptable with OnControl device.
- The time taken for the procedures was a third of the time taken using the traditional methods (average data was reported) which usually take up to 30 min from start to finish.
- This could potentially save the NHS in costs associated with time of procedure and staff booking time.

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CONTACT INFORMATION

hisam.siddiqi@nhs.net

m.marwah1@aston.ac.uk