Bradbury, C., Buckley, T., Sun, Y. Z., Rose, P., & Fitzmaurice, D. (2019). Patients with High levels of Circulating Endothelial Progenitor Cells (EPC) following at least three months of anticoagulation for unprovoked Venous Thromboembolism (VTE) are at low risk of recurrent VTE: Results from the ExACT Randomised Controlled Trial. EClinicalMedicine, 17, [100218]. https://doi.org/10.1016/j.eclinm.2019.11.011
Endothelial progenitor cells (EPCs) were identified by weak CD45 (unlike haematopoietic cells), low side scatter, expression of immaturity (CD34, b and d) and expression of endothelial markers (CD146, VEGFR-2/KDR, e and f). Cells in panels e and f are derived from the low SSC, CD45- gate (panel c).
Baseline results

|                  | Thrombosis recurrence | No thrombosis recurrence | P value (t test) |
|------------------|------------------------|--------------------------|-----------------|
| WCC (x10^9/L) n=216 | 6.64 ± 0.34, n=28      | 6.69 ± 0.15, n=188       | 0.91            |
|                  | 6.48 (5.10 - 7.85)     | 6.36 (5.27 - 7.57)       |                 |
| mCECs (cells/ml) n=193 | 27.55 ± 5.98, n=24    | 37.88 ± 5.16, n=169     | 0.46            |
|                  | 18.4 (11.00 - 32.30)  | 15.7 (7.55 - 37.30)      |                 |
| EPCs (cells/ml) n=193 | 43.41 ± 7.69, n=24    | 87.10 ± 7.15, n=169     | 0.02            |
|                  | 25.6 (13.80 - 64.50)  | 59.8 (23.60 - 118.70)    |                 |
| D Dimer (mg/L) n=205 | 0.414 ± 0.077, n=28   | 0.474 ± 0.068, n=177    | 0.73            |
|                  | 0.28 (0.15 - 0.53)    | 0.25 (0.18 - 0.43)       |                 |

**Figure 2** Laboratory results from peripheral blood samples taken at baseline prior to randomisation (all patients on anticoagulation at this point). Endothelial progenitor cells (EPC). Data represented is mean ± SD (a), D-dimer (b) and relationship of D Dimer and EPC results (c). Table (d) also includes results for WCC=White cell count, mCECs= Mature circulating endothelial cells.
Figure 3 Comparison of survival free from VTE recurrence. EPC high versus low in discontinued AT group (a) and extended AT group (b). D-dimer positive versus negative in discontinued AT group (c) and extended AT group (d). Males vs females in observation group (e) and warfarin continuation group (f).
Figure 4. Area under receiver operating characteristic (AUROC) curve for EPC count (cells/ml) in predicting VTE recurrence. AUROC is 0.64 (95% CI 0.54 to 0.75, p=0.02). Dashed line represents chance performance (0.50). An EPC threshold of <100 cells/ml gives a sensitivity of 95.83% and specificity of 30.77% to predict VTE recurrence.