Top tips for abstract writing

What is an abstract? The abstract is a succinct summary of your research project, including stating the specific question you explored, the methodology used, results obtained and the conclusions drawn from it. This is your chance to capture the most important messages from your presentation or paper, plus convey some of the context for why you initially embarked on the project and why your findings matter.

Your abstract might be the hardest part to write. Typically, you will have 100-150 words to play with. For such a short burst of text, abstracts can be deceptively tricky to compose. Writing the abstract last can be a huge help: you can take a birds-eye view over the finished project and pick out the most salient aspects, in addition to how it complements the rest of the research landscape.

State the research problem and context. Why did you embark on the project? Colleagues even slightly outside your specialism might not appreciate the problems you set out to solve or the significance of your work. A quick sentence to contextualize this is essential to capture their interest and justify why your project is important.

Appeal to a wide variety of readers. Abstracts are an opportunity to attract an audience who might be flicking through a conference booklet or scrolling through hits from an online database. The abstract gives them a taste of the project, allowing them to decide if they want to invest in reading your paper or attending your presentation.

Summarize your main results. The main findings belong in the abstract. Depending on your project type, it might be appropriate to deliver quantitative results at specific endpoints (e.g. in a clinical trial setting) or a more qualitative description of your findings might be better (e.g. if you have collected thematic interviews from patients).

Subheadings can guide the reader. Using subheadings can signpost the reader to the key points you want to make and let them zoom in on aspects they might be more interested in.

Avoid first-person pronouns and use active verbs! Focus on active verbs that describe what the *project* did and achieved (e.g. *This study examines… This project explored…)*, rather than using *I/we*.

Keep it concise. Short and sweet is the motto for abstracts. Try to dedicate a similar percentage of abstract space to methods, results, discussion etc. as in the actual paper or presentation. Avoid repeating phrases from the title in the abstract: words are precious!

Extra bits!

Author list. Usually the most senior researcher or supervisor is last on the list, whereas the first author on the list typically performed the bulk of the research

Author Affiliations. Remember to cite all authors and their relevant institutions/hospital/organisation.

Keywords. Once published, your abstract may be indexed in an online database. Keywords help future researchers to extract relevant abstracts from hundreds of thousands of entries. A keyword can be a single word – but ideally is a short few-word phrase (e.g. *single-cell biology*, *acute myeloid leukaemia, prognostic factors*) – that describes the topic covered or the methods used in your study that you could imagine typing into a search bar.

Grants/acknowledgements. Some conference or paper submissions will ask for a quick summary of funding agencies and grant codes that supported your work

In-vivo T-cell depleted reduced-intensity conditioned allogeneic haematopoietic stem-cell transplantation for patients with acute lymphoblastic leukaemia in first remission: results from the prospective, single-arm evaluation of the UKALL14 trial

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Summary

Background The outcome of chemotherapy in patients older than 40 years with acute lymphoblastic leukaemia is poor and myeloablative allogeneic haematopoietic stem-cell transplantation (HSCT) has a high transplant-related mortality (TRM) in this age cohort. The aim of this study was to assess the activity and safety of reduced-intensity conditioned allogeneic HSCT in this patient population.

Methods This was a single-arm, prospective study within the UKALL14 trial done in 46 centres in the UK, which recruited patients to the transplantation substudy. Participants in UKALL14 had B-cell or T-cell acute lymphoblastic leukaemia, were aged 25–65 years (*BCR-ABL1*-negative) or 18–65 years (*BCR-ABL1*-positive), and for this subcohort had a fit, matched sibling donor or an 8 out of 8 allelic matched unrelated donor (HLA-A, HLA-B, HLA-C, and HLA-DR). On June 20, 2014, the protocol was amended to allow 7 out of 8 matched unrelated donors if the patient had high risk cytogenetics or was minimal residual disease (MRD)-positive after the second induction course. Patients were given fludarabine, melphalan, and alemtuzumab (FMA; intravenous fludarabine 30 mg/m² on days –6 to –2, melphalan 140 mg/m² on day –2, and alemtuzumab 30 mg on day –1 [sibling donor] and days –2 and –1 [unrelated donor]) before allogeneic HSCT (aged ≥41 years patient pathway). Donor lymphocyte infusions were given from 6 months for mixed chimerism or MRD. The primary endpoint was event-free survival and secondary and transplantation-specific endpoints included overall survival, relapse incidence, TRM, and acute and chronic graft-versus-host disease (GVHD). This study is registered with ClinicalTrials.gov, NCT01085617.

Findings From Feb 22, 2011, to July 26, 2018, 249 patients (236 aged ≥41 years and 13 younger than 41 years) considered unfit for a myeloablative allograft received an FMA reduced-intensity conditioned HSCT. 138 (55%) patients were male and 111 (45%) were female. 88 (35%) participants received transplantations from a sibling donor and 160 (64%) received transplantations from unrelated donors. 211 (85%) participants had B-precursor acute lymphoblastic leukaemia. High-risk cytogenetics were present in 43 (22%) and another 63 (25%) participants were *BCR-ABL1*-positive. At median follow-up of 49 months (IQR 36–70), 4-year event-free survival was 46·8% (95% CI 40·1–53·2) and 4-year overall survival was 54·8% (48·0–61·2). 4-year cumulative incidence of relapse was 33·6% (27·9–40·2) and 4-year TRM was 19·6% (15·1–25·3). 27 (56%) of 48 patients with TRM had infection as the named cause of death. Seven (15%) of 48 patients had fungal infections, 13 (27%) patients had bacterial infections (six gram-negative), and 11 (23%) had viral infections (three cytomegalovirus and two Epstein-Barr virus). Acute GVHD grade 2–4 occurred in 29 (12%) of 247 patients and grade 3–4 occurred in 12 (5%) patients. Chronic GVHD incidence was 84 (37%) of 228 patients (50 [22%] had extensive chronic GVHD). 49 (30%) of 162 patients had detectable end-of-induction MRD, which portended worse outcomes with event-free survival (HR 2·40 [95% CI 1·46–3·93]) and time-to-relapse (HR 2·41 [1·29–4·48]).

Interpretation FMA reduced-intensity conditioned allogeneic HSCT in older patients with acute lymphoblastic leukaemia in first complete remission provided good disease control with moderate GVHD, resulting in better-than-expected event-free survival and overall survival in this high-risk population. Strategies to reduce infection-related TRM will further improve outcomes.

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Subheadings for each main section

affiliations

Context: what do we already know about this topic? Just enough to establish the context and rationale for the study

Research study structure and setting: short and sweet

Clear signposting to primary and secondary endpoints

Results expressed in words and statistics (p values and confidence intervals in brackets)

Inclusion of adverse effects

Main takehome message and suggestions for future development