

Utilisation of PET in late phase clinical trials in oncology: a review of research databases in the UK and abroad



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Aim

This study reviews the utilisation of PET in late phase clinical trials in the UK and abroad; undertaken to support the activities of the NCRI PET Research Initiative, which was recently established by the National Cancer Research Institute to stimulate and support PET research in the UK.

Methods

The Current Controlled Trials (www.controlled-trials.com) database was searched across all of its registers (metaRegister-mRCT) to identify late phase clinical trials utilising PET in oncology.

Trials were categorised as follows:

- By country.
- By tumour type according to the NCRI Clinical Study Groups.
- By PET application: Clinical Efficacy (CE), Patient Selection (PS), Treatment Response (TR) and Other (OT).

The NCRI PET Research Initiative

The NCRI PET Research Initiative intends to stimulate and support the build-up of a UK research programme in PET that is internationally competitive, novel in approach and relevant to the eventual uses of PET in the clinic.

The work will be taken forward by the **PET Research Network** and delivered by three work-streams:

1. Trials network and technology development (Lead: Dr Paul Marsden, London)
2. Increasing the adoption of PET into late phase trials in oncology (Lead: Prof. Ken Miles, Brighton)
3. Stimulating early phase research in PET (Lead: Prof. Fiona Gilbert, Aberdeen)

For information on the Pet Research Network visit: www.ncri-pet.org.uk

Results

From 20645 late phase trials, 91 (0.44%) oncology trials utilising PET were identified (8 UK, 83 overseas). See Figure 1 for the country distribution of trials per million population.

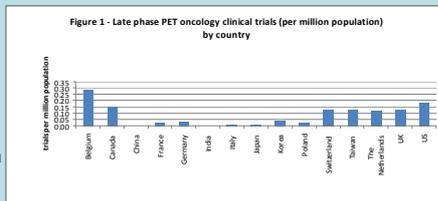
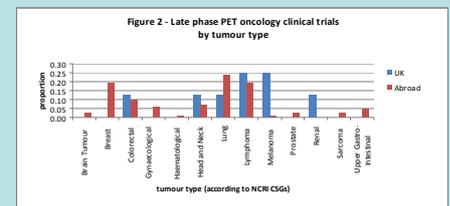


Figure 2 shows the proportion of trials by tumour type. Worldwide, the most common tumours studied were lung cancer (23.1%) and lymphoma (19.8%). Breast cancer constituted 17.6% of studies worldwide but was not represented amongst UK PET studies.



Treatment Response was the most common PET application worldwide (40.7%) followed by Patient Selection (37.4%). Studies of PET clinical efficacy comprised 19.8%.

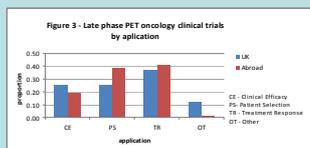


Figure 3 compares the proportion of trials by application.

Utilisation of PET for Patient Selection was lower in the UK (25%) than overseas (38.6%).

The results of this and subsequent periodic reviews can be used to develop a 'dashboard' reflecting the current status of late phase PET research in the UK and abroad.

This dashboard will allow PET research stakeholders to interactively compare current research status with that of previous reviews and visualise the position of UK PET research with respect of that of other countries for the different tumour types and applications.

In addition to providing information to PET researchers, these reviews will help the PET Research Network identify specific issues to be addressed and general areas of intervention.

Future improvements to our search methods will include cross-referencing with additional trials registers.

Discussion

Expressed as PET studies per capita, the UK was 6th of 15 countries. Belgium conducts substantially more trials per capita than the UK and the rest of the world; a sign of the high levels of access to PET in this country.

There is relatively low utilisation of PET for breast cancer in the UK; but a considerably larger proportion of melanoma and renal studies.

The low utilisation of PET for Patient Selection in the UK, compared with the rest of the world, may reflect limitations in PET access for clinical practice and research.