## Lymphoma - Trials and Prevalence

With breast cancer data as an arbitrarily selected comparator

| ClinicalTrials.gov Data 5/24/2010 |  |  |  | Estimated | 5\% ${ }^{\text {\% }}$ enrollment rate |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | US Studies Found All studies | Open studies Seeking volunteers | Prevalence | Available patients @ enrollment rate | Available patients per Open studies | Available patients per All studies | Patients available for Open studies @ enroliment rate |
| Lymphomas | 2,275 | 870 | 417,860 | 20,893 | 480 | 184 | 24 |
| Completed | Open studies: | Interventional | Phase I | Phase II | Phase III | Phase IV |  |
| 1,405 | 870 | 776 | 341 | 423 | 57 | 4 |  |
| Comparing with Breast Cancer: |  |  |  |  |  |  |  |
| Breast cancer prevalence is six times greater than lymphoma, but number of open studies is identical on this date. |  |  |  |  |  |  |  |
|  | us <br> Studies Found <br> All studies | Open studies Seeking volunteers | Prevalence | Available patients @ enrollment rate | Available patients per Open studies | Available patients per All studies | Patients available for Open studies enrollment rate |
| Breast Cancer | 2,112 | 870 | 2,605,181 | 130,259 | 2,994 | 1,234 | 150 |
| Completed | Open studies: | Interventional | Phase I | Phase II | Phase III | Phase IV |  |
| 1,242 | 870 | 686 | 184 | 319 | 84 | 19 |  |


| Complete Prevalence | HL | NHL | CLL/SLL | Total |
| :---: | :---: | :---: | :---: | :---: |
| Lymphoma (by type, male and female) | 84,583 | 226,855 | 106,422 | 417,860 |
|  |  | Female | Male |  |
| Breast Cancer (by gender) |  | 2,591,855 | 13,326 | 2,605,181 |

Background: Progress against lymphomas depends on the completion of well-designed studies that provide answers to clinical questions in order to make treatment safer and more effective
Objective: Our primary objective was to compare lymphoma prevalence data with the number of lymphoma clinical studies to estimate the challenge of clinical trial enrollment based on ClinicalTrials.gov and SEER data at an estimated $5 \%$ enrollment rate - and to compare these findings with breast cancer data, chosen arbitrarily as a comparator.

Results: We calculate there are about 24 lymphoma patients available per study at an estimated enrollment rate of $5 \%$, which suggests that enrollment could be six times as challenging for lymphoma compared to breast cancer

Discussion: The number of lymphoma studies is about equivalent to breast cancer ( 2,272 versus 2,112 , respectively) despite the much lower prevalence of lymphoma ( 417,860 versus $2,605,181$ ). This imbalance suggests an optimism among drug sponsors about the potential to more effectively treat lymphoma, because prevalence would otherwise favor more breast cancer research, assum ing marketing potential is a key factor. However, the relatively low number of patients per study increases the challenge to enroll sufficient participants -- 24 participants available per study for lymphoma, versus 150 for breast cancer.

Action: The enrollment rate must increase significantly if we are to make additional progress against lymphoma ... progress which is urgently needed. Advance in technologies and insights about lymphoma must be matched by the ability of treating physicians to locate and consider studies that are appropriate to our clinical circumstances.

