



**Susan G. Komen**

**Research Grants – Fiscal Year 2015**

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**Toxicities of breast cancer treatment**

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**Lead Organization:** MD Anderson

**Grant Mechanism:** Komen Scholars

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**Public Abstract:**

The overall objective of this proposal is to evaluate the comparative toxicities of treatments for breast cancer. Clinical trials have generated essential information on the 'efficacy' of new therapies. However, once new therapies are approved, their effectiveness and toxicity in real world populations is less clear. Patients who participate in clinical trials are highly selected: patients who are older, are minorities, have comorbidities, and who are at higher risk of side effects are under-represented or excluded from trials. Because of these strong selection factors, we hypothesize that the actual toxicities experienced by patients may be substantially higher than the data from clinical trials would suggest. Women with breast cancer have many possible treatment options with similar efficacy, but the risk of hospitalization and death may differ substantially between these treatments, especially in women with other co-existing illnesses. Concerns over the real-world toxicity profile of systemic therapies are worsened by the high costs of new therapies, to the extent that "financial toxicity" has become a new term in cancer research. In this proposal, we will evaluate treatment-related toxicities in patients with breast cancer, including comparisons between standard adjuvant chemotherapy and metastatic regimens and toxicity due to medication interactions. In addition, to investigate the comparative risks of therapy, we will also study the financial toxicity of therapy for breast



cancer, quantified by the out of pocket payments for different therapeutic regimens and types of health plan. Furthermore, the financial burden from cancer treatment may affect adherence to medications for other chronic conditions. Thus, we will also explore the association of out of pocket payments for cancer treatment with adherence to antihypertensive and lipid lowering medications. If women are less adherent to these chronic medications due to the cost of breast cancer treatment, they may experience worse survival. Collectively, these studies will cover a diverse population of older and younger breast cancer patients, with a wide array of insurance plans and generosity of coverage. The findings from this study may be used to help prevent unnecessary toxicity, including hospitalizations and death, experienced by women with breast cancer. In addition, this study will provide insight into the financial burden faced by women with breast cancer and how this financial burden impacts the use of other medications that are known to improve survival among women with breast cancer.

