Section: Contact Information

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Section: Project Requirements and Description

Group: Requirements to submit AOI

A comprehensive review of previously published data has been completed. : **Yes**

The specific aims are clear and focused. : **Yes**

The investigator has appropriate experience and expertise to develop the concept proposal; if not, has identified a mentor or senior co-investigator. : **Yes**

The investigator agrees to develop an initial draft of the concept proposal within 6 weeks of approval of the AOI and to finalize the concept proposal within 6 months. : **Yes**

Project Title : **Changes in the risk and outcomes of stroke in cancer survivors with changing treatment protocols**

Planned research population (eligibility criteria) :
Eligibility criteria (must meet both 1 and 2)
(1) Survivors of a hematologic malignancy diagnosed in childhood
(2) Self-reported stroke, as determined by:
- Follow-up 4 question K14 (yes [condition still present or not])
- Expansion question J14 (yes [condition still present or not])
- Follow-up 5 (if available) question K14 (yes [condition still present or not])

Feasibility Data: We identified 168 survivors of childhood leukemia with self-reported stroke through Follow-Up 4 and stratified them by decade of diagnosis and exposure to CRT. In the CCSS cohort of survivors of childhood hematologic malignancies, 84 had CRT exposure and 70 did not. There were 58 children diagnosed between 1970-79 with a stroke, 66 children diagnosed between 1980-89, and 44 diagnosed between 1990-99.

Proposed specific aims :
Aim #1: To determine if the risk of stroke associated with hematologic malignancies has changed over time. We hypothesize that the risk of stroke has remained stable between 1970 and 1999 despite the replacement of CRT by

intensive CNS-directed therapies for CNS prophylaxis. We will compare the incidence of stroke among survivors based on decade of diagnosis (1970-79, 1980-89, 1990-99) with n=58, n=66, and n=44 in the three.

Aim #2: To determine if, in patients with hematologic malignancies who have had strokes, exposure to CRT is associated with increased time from treatment initiation to self-reported first stroke when compared with those who were not exposed to CRT. We hypothesize that strokes due to CRT are often due to a radiation-induced arteriopathy, which takes time to develop, and that strokes due to newer chemotherapy regimens (with high intensity and/or CNS-directed therapies) are more likely related to direct drug effects on the cerebral vasculature or cardiovascular function. Therefore, we hypothesize that, on average, patients who are not exposed to CRT have strokes earlier in their treatment course than do patients with CRT exposure. We will compare time from cancer treatment initiation to first stroke in (a) subjects with hematologic malignancies and CRT exposure (n=84) versus (b) subjects with hematologic malignancies without CRT exposure (n=70).

Aim #3: To determine if age of chemotherapy initiation is a predictor of stroke and/or other neurological outcomes. We hypothesize that children that receive chemotherapy at an earlier age have a higher risk of stroke. We will compare the rates of stroke (total # self reported stroke in hematologic malignancies / total respondents with hematologic malignancies) in different age groups.

Aim #4: To assess the long-term quality of life and neurocognitive outcomes of cancer survivors who have had stroke and to determine if there are differences between those stroke patients who have had CRT to those who have not. We hypothesize that quality of life and neurocognitive outcomes will be poor in cancer survivors that have had strokes in comparison to the normative data and that there will be no difference in either quality of life or neurocognitive outcomes based on CRT exposure. We will use the SF-36 and NCQ to evaluate quality of life and neurocognitive outcomes in stroke survivors.

Will the project require non-CCSS funding to complete? : **No**

If yes, what would be the anticipated source(s) and timeline(s) for securing funding? :

Group: Does this project require contact of CCSS study subjects for:

Additional self-reported information : **No**

Biological samples : **No**

Medical record data : **No**

If yes to any of the above, please briefly describe. :

Group: What CCSS Working Group(s) would likely be involved? (Check all that apply)

Second Malignancy :

Chronic Disease : **Primary**

Psychology / Neuropsychology : **Secondary**

Genetics :
Cancer Control :
Epidemiology / Biostatistics :

Section: Outcomes or Correlative Factors

Late mortality :
Second Malignancy :

Group: Health Behaviors

Tobacco :
Alcohol :
Physical activity :
Medical screening :
Other :
If other, please specify :

Group: Psychosocial

Insurance :
Marriage :
Education :
Employment :
Other :
If other, please specify :

Group: Medical Conditions

Hearing/Vision/Speech :
Hormonal systems :
Heart and vascular :
Respiratory :
Digestive :
Surgical procedures :
Brain and nervous system : **Primary**
Other :
If other, please specify :

Group: Medications

Describe medications :

Group: Psychologic/Quality of Life

BSI-18 :
SF-36 : **Secondary**
CCSS-NCQ : **Secondary**
PTS :
PTG :

Other :
If other, please specify :

Group: Other

Pregnancy and offspring :
Family history :
Chronic conditions (CTCAE v3) :
Health status :

Group: Demographic

Age : **Correlative Factors**
Race :
Sex :
Other :
If other, please specify :

Group: Cancer treatment

Chemotherapy : **Correlative Factors**
Radiation therapy : **Correlative Factors**
Surgery :

Section: Anticipated Sources of Statistical Support

CCSS Statistical Center : **Yes**
Local institutional statistician :
If local, please provide the name(s) and contact information of the statistician(s) to be involved. :
Will this project utilize CCSS biologic samples? : **No**
If yes, which of the following? :
If other, please explain :

Section: Other General Comments

Other General Comments :