Incidence of 30 Day Return to Hospital Following Same Day Discharge Total Hip Arthroplasty

- Study Protocol -

Donald J Young, MD, FRCPC
VGH/UBCH Dept of Anesthesiology & Perioperative Care
Vancouver General Hospital & UBC Hospital
Vancouver, BC, Canada

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BACKGROUND:

Same day discharge of primary total hip arthroplasty patients is becoming common in many large hospitals in Canada & the USA.[1] At VGH/UBCH in 2017/18, a multidisciplinary committee was struck to create criteria for a same day discharge program at our hospital.

Despite the practice of same day discharge for hip arthroplasty becoming more prevalent across the country, there is a lack of specific evidence based criteria to establish which patients would be safe to be sent home same-day, and which should remain in hospital for a minimum of one over night stay.[2] With the input of various clinicians, the multidisciplinary committee established an objective set of criteria that would establish patient eligibility for same-day discharge following primary hip arthroplasty at our institution.[3] The program came to be known as the Short Term Accelerated Recovery (STAR) program and has been running since Oct 15, 2018.

The process for STAR enrollment begins with the attending surgeon earmarking the patient as potentially STAR eligible at the time of surgical booking. Following this, the patient is assessed by both Physiotherapy and Anesthesiology for eligibility to be a same day discharge or "STAR Patient". The criteria set by Anesthesiology is a document included with this submission. At the time of this submission, 78 patients have been enrolled as STAR Patients. Of these, 35 patients were deemed ineligible for STAR due to not fulfilling the preop criteria. Of the remaining 42 patients, 24 were discharged home same-day, and 19 were not able to be discharged home same-day due to perioperative issues on the day of surgery.

A failing of the program has been the lack of follow up with patients to know whether any complications or returns to hospital occurred during the first 30 days after surgery.

OBJECTIVE:

As a Quality Assurance measure of safety for this program, we wish to know the rate of return to hospital for surgical related problems that occurred in this cohort in the first 30 days following surgery. Amongst the patients initially enrolled as STAR patients (presently 78 patients) we wish to compare the rate of return to hospital between those patients who were discharged the day of their surgery to those who spent at least their first night after surgery in hospital. Our objective is to see how the rates of return to hospital for surgical related complications or issues compares between those who went home same day as their surgery and those who didn't.

METHODS:

<u>Study Design</u>:

This project is a retrospective cohort quality assurance study. Given that the criteria for enrollment in STAR is site specific and has not been established before, this project is designed to be a preliminary safety assessment that could inform future prospective studies on the

program's safety and inform the potential sample sizes needed for such studies.   As well, the study would also expose the potential for a higher than expected return to hospital for same day discharge patients which may not otherwise have been known.

The Primary Goal is to discern how many same day discharge patients had return to hospital encounters during the first 30 days post surgery, and to compare this rate to that of patients who were not discharged on the same day as surgery.

Secondary Goals will be to compare return to hospital encounters within the first 7 days post surgery, as well as to compare and contrast the age and gender demographics of the cohorts studied.

Patient Recruitment & Data Sources:

A list of all patients enrolled in the STAR Process is retained by the PI. Research Personnel will use this list to review STAR Patient's charts. This will include both the paper chart records at VGH and UBCH, as well as the BC Care Connect provincial online charts. Patients enrolled in STAR need to live within one hours drive of VGH and are instructed to return to the VGH Emergency Room if they have surgical related concerns after surgery. Nonetheless, patients living in the surrounding areas that are within an hour of VGH (eg. Burnaby or Surrey) may have occasion to visit their local hospital rather than return to VGH. It is for this reason that the BC Care Connect network will be accessed for each patient to see if any hospital encounters other than at VGH occurred during the first 30 days after surgery.

The chart records will be reviewed specifically looking for post surgical hospital encounters up to 30 days post hip arthroplasty. If a post surgical encounter is found on record, the nature of the encounter within the chart will be explored to discern whether the encounter was for a surgical related problem. If a post surgical encounter is found, data collected about this encounter will include the nature of the problem and how many days postop the encounter occurred. Sources of information for this data collection will be entirely by chart review. There will be NO patient contacts made for the purpose of data substantiation.

Inclusion Criteria:

All patients initially identified by their surgeon as potentially STAR eligible (this occurring prior to both Physiotherapy and Anesthesiology STAR assessments) are eligible as data sources in this study.

Exclusion Criteria:

It is possible that a STAR eligible patient may not ever have come to surgery. Such patients would be excluded from the study as all patients have to have had a surgical procedure performed to be included.

Number of Patients:

As the specific criteria to be a STAR Patient at VGH/UBCH is new and not formerly used elsewhere, it is unknown how many patients would be needed to show a statistically significant difference between the two groups. Indeed, one of the main purposes of this study is to act as a

preliminary indicator for the rate of return to hospital of such patients to inform a future prospective study's appropriate sample size.

To this end, we anticipate that up to 120 patients will have been through the STAR screening process by Oct 1, 2019 and that this should allow ample opportunity to compare the two groups.

De-identification & Data Management:

Each patient's personal identifiers (Name & Date of Birth) will be linked to a Patient Study Number. The matching of personal identifiers to a Patient Study Number will occur only on one list, retained only by the PI and separate to all other data collection spreadsheets. Data collected to fulfill the Primary and Secondary Outcomes will only contain the Patient Study Numbers, with no personal identifiers. The personal identifiers will be used by study personnel to attain the patient's paper VGH/UBCH charts, as well as being the source to the patient's BC Care Connect chart. We reiterate that none of the these personal identifiers will appear on any of the Primary & Secondary Outcomes data collection spreadsheets.

Data linking the patient's personal identifiers and the Patient Study Numbers will be retained only by the PI. This linked data will be stored only on a password protected personal computer hard drive retained by the PI, and will not be stored on any "Cloud" or "off site" Server. Neither will it be shared electronically with any of the study personnel. Paper copies of the linked data will be handed directly to Study Personnel by the PI for the purpose of data collection. These paper copies will be destroyed once the data collection is completed by Study Personnel.

Deidentified data will be collected onto a spreadsheet and retained in Redcap. This will be shared amongst Study Personnel via online password protected access. Included with this submission are the "Column Headings" for the five data collection spreadsheets that will be used in this study, one of which is the "De-Identifier" spreadsheet.

Statistical Analysis:

A Statistician, affiliated with the Dept of Statistics at UBC, will be retained to run the comparative analysis between the rates of return to hospital between the two groups, as well as characterizing the group's demographics of age and gender. The Statistician will be blinded to all personal identifiers.

INVESTIGATION TEAM:

The Principle Investigator in this study (DJY) is ultimately responsible for all matter of data collection and processing. All others collecting data will be either members of the Dept of Anesthesia at VGH & UBCH, or Medical Students from a Canadian University and trained by the Principle Investigator in the process of data collection. Any Medical Students involved in this project will be granted the right to participate in data collection by the Dept of Anesthesia prior to commencing.

ETHICAL REQUIREMENTS:

The study will be performed in accordance with the principles stated in the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2).

The Principle Investigator is responsible for informing the ethics committees of any major amendments to the protocol as per local requirements. All correspondence with the committee will be filed by the Principle Investigator.

CONCLUSION:

This retrospective cohort quality assurance project seeks to make some preliminary assessments of the STAR Program's rate of return to hospital up to 30 days following primary hip arthroplasty. Specifically, the rates of return to hospital are compared between those patients discharged from hospital on the day of their surgery, and those who stayed at least one night in hospital before being discharged. Our objective is to use this comparison as a quality assurance measure of safety for discharge same day of patients who meet our clinical criteria to do so.

REFERENCES:

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