SAVING MONEY
BY
SAVING PATIENTS

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STROKES

EXECUTIVE SUMMARY

During one year, according to statistics obtained from the *Canadian Stroke Network* survey of December 30, 2003, there were 50,000 strokes suffered by Canadians. In British Columbia, if the stroke is deemed to be a hemorrhagic stroke, the patient is transported, if no local treatment is available, for immediate surgery to avoid further damage from the bleeding into the brain.

If the stroke, however, is deemed to be an ischemic stroke, (a stroke caused by a blood clot to the brain) and the patient is considered, for the present time, not to be in danger of death, that patient receives palliative care, followed by in-hospital physiotherapy to optimize what remaining use of body and limb still exists. Loss of acuity treatment is negligible. Ischemic stroke is by far the most common stroke suffered.

There presently exists, in Canada, a treatment for eschemic stroke which has the potential of effectively reversing all or much of the damage that the stroke has inflicted to the brain, after which the patient is sometimes capable of walking out of the hospital, and perhaps the on same day after admittance and treatment. It has been used in Ontario and Alberta for several years; and in Ontario there has been a recommendation that it be more widely used. This is a win-win solution for the taxpayer, the over-burdened hospitals and their dedicated staff, and is a god-send for the patient and their family.
INTRODUCTION

On January 2, 2002, my husband, Mac Sinclair, at age 67, suffered a devastating eschemic stroke. Mac was newly retired from teaching math and physics at Selkirk College in Castlegar, and, for most of his years, had been an athlete. Because of the stroke, his life has been drastically and permanently changed.

There is now a treatment, which, if given in a timely manner, has the capability of reversing the effects of stroke. It is too late for Mac but this brief is for the purpose of hopefully enabling a B.C. resident, who suffers an eschemic stroke, the possibility of a return to a normal life.
MEDICAL INTERVENTION FOR ESCHEMIC STROKE

1. STROKE OCCURRENCE IN CANADA

The B.C. Government *Conversation on Health* information package cites 12.8 billion dollars are currently spent on health in British Columbia. With the expected large increase in the aging population, the greater incident of stroke will add to our burgeoning health care costs.

An eschemic stroke occurs suddenly, and without warning, as a result of a clot moving to the brain. The result is blockage of blood circulation to the brain, and it leads to the death of whichever brain cells suffer a lack of blood supply. Depending on which part of the brain is affected, the stroke sufferer experiences either a slight or serious degree of physical impairment, and/or loss of cognitive ability. Once the area of brain tissue damage is complete, there is no available method of damage reversal at the present time. The patient is then left with life-long disabilities. At this time there is no possibility of down-the-road treatments, such as the angioplasty, bypass, heart valve replacement, or heart transplant surgeries that are available to those with heart disease.

2. THE TPA TREATMENT

The *TPA treatment is comparatively new, and consists of delivering a clot-dissolving substance directly to the clot responsible for stopping the flow of blood to the brain. To achieve the best results, the treatment should be administered within 3 hours of having a stroke, although it will still bring much success even 6 hours after the stroke occurs.*
Before the treatment begins, a team of 3 specialists must ensure that the stroke indeed is ischemic, and that the patient does not have any medical condition that would eliminate him as a candidate for the treatment. The specialists who are involved in the examination and treatment are a Neurologist, a Radiologist, and a Doctor of Internal Medicine. If given in a timely manner, the TPA treatment can greatly reduce or completely reverse the prospect of permanent disabilities to the patient.

Without the emergency TPA treatment, the patient’s future consists of the possibility of: Loss of income to the family, necessity of in-home care or entry into a long term extended health facility, a long period of physiotherapy, increased dependency on family members or community, and, in some cases, family breakdown. The patient is denied the possibility of living a healthy lifestyle, which can result in more chronic health problems which commonly afflict those who cannot remain active. This scenario is an unhappy one for the stroke family as well as for the B.C. taxpayer.

3. PRESENT TREATMENT FOR ISCHEMIC STROKE AND RESULTING COSTS

The present B.C. Medical approach for treatment of ischemic stroke is palliative care, which usually requires more than 1 month in hospital. Representatives from the Nelson & District Hospital and the Kelowna Regional Hospital, respectively, provided us with the cost per day for staying at their hospital. The information that we received was that as an in-patient in the acute ward at the Nelson & District Hospital for 1 month, the cost per day was $518.00. As an in-patient at the Rehab Unit of the Kelowna Hospital the cost per day for 2 months was $545.00. These amounts totalled over $50,000.00, and these were the costs for the year 2002. The present day costs would be much
higher. Added to these costs were the ongoing costs to the taxpayer for continued out-patient physiotherapy, which continued, sporadically, for another 2 years. At the time of Mac’s stroke, there were 3 other hospitalized stroke patients at the Nelson Hospital who also joined with other patients at the Kelowna Hospital Rehab Unit for in-hospital Rehab physiotherapy.

Of course, to avoid many of these crisis situations, the best remedy is to live a healthy lifestyle, eat a healthy diet, and have regular medical check-ups. Mac had proven when he was about 20 years younger, that he had thick blood, when he developed a pulmonary embolism (clot) after gallbladder surgery. We were conscientiously living and eating in a healthy manner. Mac was not a smoker and drank little alcohol. Before his retirement in 1997, he taught math and physics at the Selkirk College in Castlegar, and he was an athlete for most of his life. For a short while before his stroke, he had become slightly debilitated by a painful arthritis. The ramification of that loss of activity, and increase in weight, which none of us realized, was a stroke. Almost 2 months before his stroke occurred he went for a medical check-up. Tests were ordered in turn, and results came back also in turn. This meant a series of visits to the Doctor’s office for the next phase of test requests, and more visits to receive the results. In fact this process was still ongoing when the stroke occurred. To that point, no drugs had yet been prescribed when it was discovered that he had an increase in blood pressure.

4. AMBULANCE REGULATIONS NOW IN EFFECT

We live only about 5 blocks from the hospital, but on the day of Mac’s stroke, it took the ambulance 40 minutes to reach our house. It was explained to us that the delay was caused because
the ambulance attendants were, at the time, having to stay with a patient at the Hospital ER until seen by a Doctor. It was another 30 minutes for the ambulance team to do a medical evaluation of Mac, then transport him to the hospital. He lay in ER for 2 hours before he was looked at by a Doctor. After the Doctor confirmed that Mac had had a stroke, the same ambulance attendants appeared at his bedside to re-load him into the ambulance and to then drive him to the Kootenay Boundary Hospital in Trail for a CT Scan. The stroke happened at 7:30 am. The CT Scan was done at about 12:00 noon at Trail. He was returned to the Nelson Hospital at about 2:00, and didn’t receive a heparine injection until about 3:30, after the next Doctor saw him.

5. NEED FOR SPECIALIZED MEDICAL PROFILING FOR SENIORS

Crisis intervention such as that which occurs when someone suffers a stroke could be avoided by seniors to some extent if they could be referred to a Gerontologist for a general check-up before their health problems reach a critical level, resulting in more savings for the taxpayer.

I recently was reading a magazine article concerning health for seniors. Among many topics was a conversation with a Gerontologist, who said (loosely quoted) “family physicians treat the elderly and therefore feel that they are qualified to treat the elderly. Indeed, health issues of the elderly are quite complex and require a Gerontologist’s skills.”

6. PAY DOCTORS BY THE PATIENT, NOT BY THE VISIT

Perhaps faster diagnosis and treatments might have occurred if Doctors were paid for each patient that they treat, and not by each patient’s visit. This may also encourage Doctors to take more of an interest in the patient’s lifestyle so that so many visits to his office would not be needed.
7. ADDRESSING INEFFECTIVENESS IN OBTAINING LAB TESTS AND DIAGNOSIS

Why are test results not given over the phone? This would save the time required to make another appointment. If the Doctor wishes to see the patient again as a result of the test, this could still be done. Why was it necessary to space out the test requests? The option of getting them all on the same day could save time off work for some people, and speeds up the Doctor’s diagnosis and recommendations.

8. CHANGES IN AMBULANCE REGULATIONS NEEDED

The ambulance attendants were helpful and worked very professionally, but one wonders why they had to remain at the hospital for the 2 hours before Mac was seen by a Doctor. This denies the possibility of aiding someone else who may need immediate medical attention, as it delayed their arrival at our home and Mac’s trip to the hospital. They were nowhere in sight while Mac was in the ER, so wouldn’t have been able to help should he have had a turn for the worst.

Why must ambulance attendants have to deliver a patient to the nearest hospital? No stroke help was available at the Nelson Hospital. What Mac needed was an immediate CT Scan, and so he should have been transported directly to the Trail Hospital. We were told that if the CT Scan had proven Mac’s stroke to be hemorrhagic, he would have been immediately air ambulanced to Calgary. Why is not the same humanitarian action afforded to a victim of a serious ischemic stroke?
Even better, as there is no TPA treatment available in B.C., he should immediately have been transported by air ambulance to Calgary, where the TPA treatment is available. This would be a less costly method of handling a person who has been diagnosed as having had a stroke, rather than all the hospitalization, therapy, counselling, and home assistance costs which are the result of palliative care. If both hemorrhagic and serious ischemic strokes were transported to Calgary, the CT Scan could be done on arrival in Calgary, therefore avoiding time delays with trips back and forth between Trail, Nelson and the airport.

9. ACCESS TO SUCCESSFUL STROKE INTERVENTION IN RURAL AREAS

The best solution to bring the availability of the TPA treatment to the West Kootenay Region is, of course, to establish a centrally-located regional hospital, where treatment could be made possible because of the necessary CT scan machine and compliment of specialists necessary to conduct a TPA treatment. The hospital could also provide easier access for the many other treatments and services that become necessary for Kootenay residents. The large Kootenay Lake area, on both the east and west sides, has a proportionally large aging population, as seniors are attracted to retiring in locations that provide access to waterfront. The need for medical intervention therefore is proportionately greater.

Until a centrally-located hospital for the West Kootenays is realized, however, it would appear that the system of air ambulance transport for ischemic stroke victims to an area which offers the TPA
treatment remains the best option. The air ambulance system is presently used to transport other types of emergencies from areas of the West Kootenays to medical help where it is available.

My understanding is, after discussion with a local medical specialist, that, although the Nelson Hospital now has on staff a Doctor of Internal Medicine, a Radiologist, and a Neurologist, which are the specialists required in examination, and usage of the TPA treatment, the cost of setting up a CT Scan machine at the Nelson Hospital and staffing it would be cost-prohibitive. Would it be possible to use computer technology in this locale to connect the examinations made by the specialists in Nelson with Trail Hospital CT Scan results? Could a patient be ambulanced to Trail for the CT Scan, then ambulanced back to the Nelson Hospital for examination and the TPA treatment?

An interesting incident happened on the way back from Trail, which was 5 hours after Mac’s stroke. He suddenly had regained complete movement of the right side of his body, including his right arm and leg. This only lasted for about two minutes before the clot closed back in. What this proves is that even 5 hours after a stroke, it is not too late to receive a TPA treatment.

10. STROKE SYMPTOM TO ADD TO PUBLIC AWARENESS CAMPAIGN

The Heart & Stroke Foundation of Canada puts out ads which include symptoms of a possible stroke. These are quite valuable. There is one symptom, however, which I have never seen listed in any pamphlet or ad. It is that of diminished acuity. Mac had a warning stroke which resulted in this symptom only, but as no information warned me of an impending major stroke, I was more
concerned that he was beginning to suffer from an ailment such as Alzheimer’s Disease, and, therefore, the symptom, although it caused worry, did not appear to be an emergency. I would like this symptom of *loss of acuity* to be added to future public information ads and pamphlets about the warning signs of stroke.
11. SUMMARY OF SOLUTIONS FOR SAVING MONEY BY SAVING PATIENTS

- In an area lacking a centralized hospital with trained specialists, referral of seniors to a Gerontologist, located in the Kootenays, for a specialized examination would lessen the number of medical conditions which develop later into medical emergencies.

- Doctors would be less inclined to bring back patients for additional visits if they were paid according to how many patients they are treating rather than by visit.

- Try to combine Lab test requests into as few separate lab visits as possible, thereby aiding in a faster final diagnosis.

- Free up the ambulance attendants from having to remain at the hospital until the patient is seen by the Doctor; then they can attend to the next patient’s transport to hospital faster. It may turn out to be more of an emergency.

- Until a fully staffed, centrally located regional hospital is built in the West Kootenays, 1. Transport the stroke patient by air ambulance to a center that offers TPA treatment, or, 2. Arrange for a patient to receive a CT Scan & necessary examination and treatment in the Kootenay area.

- Ensure that symptoms of impending stroke, cited by public awareness campaigns, include ALL symptoms such as signs of loss of acuity or memory.
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