Saskatchewan Stroke Expert Panel **December 15, 2017**

CLINICAL STROKE ADVISORY

CONSENT FOR IV CONTRAST – STROKE ALERT PROTOCOL

Stroke is a medical emergency and requires immediate access to CT / CTA to guide life-saving care decisions. Standardized system processes across primary stroke centres in the Saskatchewan Health Authority are critical to providing safe, quality patient care. This memo clarifies the consent requirements for stroke alert patients throughout the Saskatchewan Health Authority.

Recommendation:
In the hyper-acute phase of stroke (stroke alerts), consent for contrast to complete a CT Angiogram is not required. **Each primary stroke centre should update its stroke alert protocols as required to ensure this step is removed from its current processes.**

The risk of contrast-induced nephropathy (CIN), which is defined as an elevation of 25% or more from serum creatinine baseline within 2 to 3 days of exposure, is commonly stated as a reason for delaying or not obtaining CTA. Despite this widely-held belief, there is little evidence to support CIN as a clinically meaningful phenomenon.

In a large prospective study of patients presenting with acute ischemic stroke, the rate of contrast-induced nephropathy in the group receiving contrast was half of that of the group not receiving it (5 and 10%, respectively)[1]. Similar results have been found in patients presenting with ICH who did or did not receive contrast[2] [3]. Furthermore, a recent population-based study found no association between acute kidney injury and contrast administration in the setting of both ischemic and hemorrhagic stroke[4]. The incidence of contrast nephropathy is less than 1%, even in the setting of preexisting renal disease.

In summary, clinical evidence indicates allergic reaction to CT contrast is extremely rare and should not delay treatment in emergency situations. In the setting of acute disabling stroke, CTA should be performed immediately after non-contrast CT head without hesitation. Informed consent policies throughout the former health regions remain valid and provide policy directive for the treating physician to bypass consent in a medical emergency such as acute stroke.

Thank you for your commitment to providing safe, timely and quality care to patients.

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[1] Lima FO, Lev MH, Levy RA, Silva GS, Ebril M, de Camargo EC, et al. Functional contrast-enhanced CT for evaluation of acute ischemic stroke does not increase the risk of contrast-induced nephropathy. AJNR Am J Neuroradiol. 2010;31(5):817-21.

[2] Oleinik A, Romero JM, Schwab K, Lev MH, Jhawar N, Delgado Almandoz JE, et al. CT angiography for intracerebral hemorrhage does not increase risk of acute nephropathy. Stroke. 2009;40(7):2393-7.

[3] Hotta K, Sorimachi T, Osada T, Baba T, Inoue G, Atsumi H, et al. Risks and benefits of CT angiography in spontaneous intracerebral hemorrhage. Acta Neurochir (Wien). 2014;156(5):911-7.

[4] Demel SL, Grossman AW, Khoury JC, Moomaw CJ, Alwell K, Kissela BM, et al. Association Between Acute Kidney Disease and Intravenous Dye Administration in Patients With Acute Stroke: A Population-Based Study. Stroke. 2017;48(4):835-9.

The 13-member Saskatchewan Stroke Expert Panel was formed in 2016 to oversee quality improvement of stroke care. The expert panel is co-chaired by Dr. Michael Kelly (clinical) and Ms. Pamela McKay (SKHA). To contact the Saskatchewan Stroke Expert Panel e-mail lori.latta@health.gov.sk.ca.