

THE IMPACT AND UTILITY OF COMPUTERIZED TOMOGRAPHY IN NEUROLOGY

F. Gerstenbrand

Considering the impact of CT in neurology it became evident that a scientific approach in the usual fashion of statistics and references from the literature would not do this topic justice, nor is it necessary. There is a period before CT and a period after CT. Today it is impossible to practice modern neurology without access to CT-scanning.

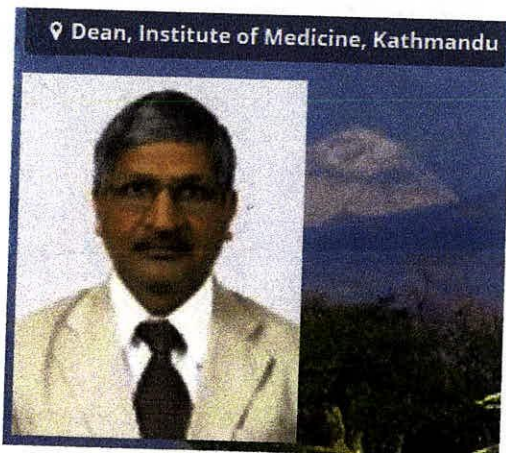
Economic analysis reveals that CT leads to marked reduction of health expenses since patient admission time is shortened. The morbidity and mortality of the diagnostic evaluation of neurological patients has decreased significantly. There is ample documentation of the reduced use of nuclear medicine scans, plane radiographs, air studies and angiograms in medical centers where CT is available. The data on the effectiveness of CT in detecting brain tumors, intra- and extracerebral hematomas, abscesses and tuberculomas caused dramatic changes in therapy. CT led to a change in therapy, Ambrose and co-workers found in 94 % reduction in craniotomies in patients having CT after acute head trauma. CT also influenced the choice of therapy in patients with stroke and intracranial bleeding. CT improved statistically the survival of patients with brain tuberculoma and abscesses, too.

Quoting Oldendorf: "CT scanning has become such a crucial part of diagnostic neurology and neurosurgery that it is possible to compare it to shadow radiography for the orthopedic surgeon. It is generally understood that it would be virtually impossible to practice orthopedic surgery without shadow radiography of bones and a similar pivotal role now exists for CT scanning in the clinical neurospecialities."

In Western countries as well as in Japan CT is now replaced by MRI for almost all neurological indications except acute bleeding and neurotraumatology. MRI of patients with cranial and spinal problems influenced clinicians' diagnosis and management plans, but the quality of life of these patients remained unchanged, whereas CT provided a high impact on quality of life. The transition from CT to MRI is going on, depending on the economic factors and health care controls.

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Prof. Dr. Jagadish Prasad Agrawal

Place of Work Department of Neurology, Maharajganj Medical Campus, Institute of Medicine, Kathmandu, Nepal

Designation Dean, Institute of Medicine, Tribhuvan University since 12/3/2016

Executive Director, National Centre For Health Professions Education(NCHPE), Institute of Medicine, Kathmandu

Professor, Internal Medicine, Maharajganj Medical Campus, Department of Neurology

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