Retinal Implant to Improve Vision in Patients with Retinitis Pigmentosa

Who Might Benefit?

Retinitis pigmentosa is a group of eye disorders involving the retina that causes slow but progressive loss of vision. It affects approximately 11,000 Canadian adults. Although the cause of retinitis pigmentosa is not known, about half of all cases are linked to a family history.

Current Practice

There is currently no cure for retinitis pigmentosa, and no treatment to delay its progression. Vitamin supplements, dietary changes, and wearing darkened glasses may be of some benefit.

> A "bionic eye" that may restore some vision in adults with retinitis pigmentosa

What's New?

A new prosthetic, one that has been likened to a "bionic eye," has been developed to possibly restore some vision in adult patients with retinitis pigmentosa and severe sight impairment. The prosthetic retina is surgically attached to the back of the eye in patients who have some remaining light perception and nerve function in the eye. The implant electrically stimulates the retina in order to produce light perception. It is attached externally to a camera and video-processing unit through a cable connected to a pair of glasses worn by the patient.

Potential Advantages

The device has the potential to restore some level of vision and improve patients' independence and mobility, although proof of its long-term effects is not available. Studies have shown that patients who received the implant had improved performance in distinguishing motion, recognizing letters, and perceiving colours. The cost of the device and its surgical implantation is estimated to be US$115,000, with some additional associated costs, such as patient and health care provider training and support. It is suggested, however, that these costs would be outweighed because of potential savings related to reduced patient need for social care and support services.