

## Original Paper

# Diagnostic validity of BCL-2 in ganglion cell staining and its application in Hirschsprung's disease diagnosis

Izadi B (MD)\*<sup>1</sup>, Kamkar N (MD)<sup>2</sup>, Kanani M (MD)<sup>2</sup>, Khazaei S (MSc)<sup>3</sup>, Madani SH (MD)<sup>1</sup>

<sup>1</sup>Assistant Professor, Department of Pathology, Molecular Pathology Research Center, Imam Reza University Hospital, Kermanshah University of Medical Science, Kermanshah, Iran. <sup>2</sup>Resident of Pathology, Molecular Pathology Research Center, Imam Reza University Hospital, Kermanshah University of Medical Science, Kermanshah, Iran. <sup>3</sup>MSc of Pathology, Molecular Pathology Research Center, Imam Reza University Hospital, Kermanshah University of Medical Science, Kermanshah, Iran.

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## Abstract

**Background and Objective:** Hirschsprung's disease is a congenital disorder, characterized by the absence of ganglion cells in the intramural and submucosal plexus in distal parts of large bowel. Diagnosis is based on the histopathologic examination of hematoxylin and eosin stained sections. Due to diagnosis limitation by Hematoxylin and Eosin staining (H&E), this study was done to identify the ganglion cells by BCL-2 immunoreactivity and compared it with H&E staining.

**Materials and Methods:** In this laboratory study, paraffin blocks of 36 specimens demonstrating ganglion cells on original H&E stained sections and 35 specimens lacking ganglion cells on H&E staining, were selected. Recuts were stained by H&E and BCL-2 methods.

**Results:** Ganglion cells were observed in 36 cases by H&E staining but in BCL-2 staining ganglion cells were detected in 29 cases. In 35 cases reported negative for ganglion cells on H&E staining, ganglion cells were detected in 5 cases by BCL-2 method. Sensitivity, specificity, positive and negative predictive values for BCL-2 method for diagnosis of Hirschsprung's disease were 81%, 86%, 85% and 86% respectively. discordancy (positive BCL-2, negative H&E) was 14%.

**Conclusion:** Immunohistochemistry method using BCL-2 improve the accuracy of diagnosis in Hirschsprung's disease, when accompanied with H&E staining, particularly for negative slides.

**Keywords:** Hirschsprung, Ganglion cell, BCL-2, Immunohistochemical study

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\* Corresponding Author: Izadi B (MD), E-mail: bizadi@yahoo.com

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