High Incidence of t(11:18)(q21;q21) in Helicobacter pylori Negative Gastric MALT Lymphoma

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Background

- Gastric mucosa associated lymphoid tissue (MALT) lymphoma is strongly associated with H. pylori infection. Only approximately 10% of cases do not show evidence of H pylori infection. Those MALT lymphoma cases that are associated with H pylori often (approximately 70%) respond to antibiotics designed to eradicate H. pylori infections. However, also common in MALT lymphomas is the t(11:18)(q21;q21) translocation. It has been hypothesized that this translocation is responsible for many cases of MALT lymphoma; especially those that are H pylori negative. This study was designed to investigate the prevalence of t(11:18)(q21;q21) in gastric MALT lymphomas.

Materials and Methods

- 138 cases of gastric MALT lymphoma were identified for study
- H. pylori was tested for by serology/breath test and histology
- Cases were examined for t(11:18)(q21;q21) by PCR
- BCL 10 (DNA sequence associated with aggressive disease) expression was screened for via immunohistochemistry

Results

- Histology of all cases were similar, regardless of H. pylori positivity or presence of t(11:18)(q21;q21).
- t(11:18)(q21;q21) was found in 37 cases (24%)
- 17 cases were found to be H. pylori negative
- In these 17 H. pylori negative patients, the t(11:18)(q21;q21) translocation was found in 9 cases.
- 8/9 of these cases were BCL 10 positive

Author's Conclusions

- t(11:18)(q21;q21) occurs frequently in gastric MALT lymphomas
- This translocation is even more common in H. pylori negative cases
Clinical/Scientific Implications

- BCL 10 expression, usually associated with a more aggressive disease course, was very common in cases where there was t(11:18)(q21;q21) translocation

- The vast majority of gastric MALT lymphoma cases are H. pylori positive. Infection with H. pylori leads to colonization which induces lymphoid infiltrates and formation of acquired mucosa associated lymphoid tissue. With various DNA aberrations, this develops into a lymphoma. The most common of these aberrations is the t(11:18)(q21;q21) translocation. It often denotes cases that are unresponsive to H. pylori eradication and hence, likely represent more aggressive disease. The pathogenesis of H. pylori negative cases, and the reason that cases with t(11:18) translocations do not respond to antibiotic therapy is unknown. This study shows that cases with translocation are fairly common (24%) and even more prevalent in H. pylori negative cases (over 50%). Also, BCL 10 positivity was seen in almost all cases with t(11:18)(q21;q21). In these cases, close follow up should be instituted, as these cases are classically thought to be more aggressive.