[Comparison of the mismatch repair deficiency of colorectal cancers between African and European cohorts]

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Abstract

Introduction: According to European and American series, up to 20% of colorectal cancers are characterised by instability at microsatellites sites. MMR deficient colorectal cancers are predominantly found in the right colon. Although an increasing rate of colorectal cancer has been observed in many low-income countries including in West-Africa, data on epidemiology and biology of colorectal cancer in native Africans from this region are scarce.

Materials and methods: We aimed to study the incidence of MMR deficiency in Côte d'Ivoire and to compare the data with those from a tertiary center in Belgium. Immunohistochemistry for MLH1, MSH2, MSH6 and PMS2 was performed on paraffin-embedded tissue samples from 83 colorectal cancers (46% males) operated in Abidjan and from 343 colorectal cancers (53% males) from Brussels.

Results: Colorectal cancer was occurring at a younger age in Côte d'Ivoire compared to Belgium (median age: 53 versus 66). MMR deficiency was detected in 11.7% of Belgian cases and in 13.3% of Ivorian cases. Whereas MMR deficient cancers in Brussels were mainly found in women (24/40 i.e. 60%), in Abidjan only 3/11 (27%) were female. Moreover, the predominant location of MMR deficient tumours was different between both series: in Brussels, mainly located in the right colon (24/40 i.e. 60%) whereas in Abidjan predominantly (10/11 i.e. 91%) in the left colon. In Brussels we observed in the majority of cases (67.5%) loss of expression of MLH1 and PMS2, in Abidjan loss of expression of MSH2 and MSH6 (54.5%).

Conclusions: Our pilot study reveals differences in presentation of MMR deficient colorectal cancer between the two geographic regions suggesting differences in epidemiology and biology of colorectal cancer in native Africans.

Keywords: Africa; Afrique; Cancer; Colorectal; Immunohistochemistry; Immunohistochimie; Instabilité microsatellitaire; Microsatellite instability.
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