

Expression of NF- κ B and COX2 in Colorectal Cancer among Native Indonesians: The Role of Inflammation in Colorectal Carcinogenesis

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ABSTRAK

Tujuan: untuk menilai ekspresi NF- κ B dan COX2 pada orang Indonesia dengan kanker kolorektal (KKR) sporadis. **Metode:** penelitian kasus kontrol berpasangan dengan menganalisis jaringan tumor KKR dan jaringan usus sehat di sekitar tumor dari pasien yang sama. Pasien KKR yang dioperasi di RS Cipto Mangunkusumo Jakarta atau di RS Hasan Sadikin Bandung pada periode Januari 1998 – April 2008 disertakan sebagai subjek penelitian. Spesimen jaringan diwarnai secara immunohistokimia dengan antibodi terhadap p65 (RelA) untuk menilai ekspresi NF- κ B dan antibodi terhadap protein COX2 manusia untuk menilai ekspresi COX2 pada jaringan. **Hasil:** masing-masing 67 spesimen jaringan KKR dan jaringan sehat terkumpul dan dianalisis. Ekspresi COX2 positif pada 39 (58%) jaringan KKR tetapi positif hanya pada 19 (28%) jaringan normal ($p=0,0002$; $OR=3,75$). Sedangkan ekspresi NF- κ B positif pada 47 (70%) jaringan KKR dan 27 (40%) jaringan normal ($p<0,0001$; $OR=5,91$). **Kesimpulan:** jalur inflamasi memegang peranan penting dalam karsinogenesis KKR sporadis pada orang Indonesia. Hasil penelitian ini mendukung kemungkinan penggunaan obat antiinflamasi nonsteroid sebagai agen pencegah KKR.

Kata kunci: kanker kolorektal sporadis, karsinogenesis, COX2, NF- κ B, inflamasi.

ABSTRACT

Aim: to evaluate the expression of NF- κ B and COX2 in native Indonesians with sporadic colorectal cancer (CRC). **Methods:** we conducted a matched-pair case-control study by acquiring both CRC and tumor-adjacent normal tissues from the same subjects. CRC patients who underwent surgery at Cipto Mangunkusumo Hospital, Jakarta, or Hasan Sadikin Hospital, Bandung, were enrolled in the study. The specimens were immunohistologically stained with antibody directed against p65 (RelA) to assess NF- κ B expression and against human COX2 protein to assess COX2 expression. **Results:** sixty-seven specimens consisting of both CRC and tumor-adjacent normal tissues were analyzed. COX2 expression was positive in 39 CRC tissues (58.2%), but in only 19 tumor-adjacent normal tissues (28.4%; $p=0.0002$). NF- κ B expression was positive in 47 CRC tissues (70.1%), but in only 27 tumor-adjacent normal tissues (40.3%; $p<0.0001$). **Conclusion:** inflammation plays a role in the carcinogenesis of sporadic CRC in native Indonesians. This support potential use of nonsteroidal anti-inflammatory drugs as chemopreventive agents for CRC.

Key words: sporadic colorectal cancer; carcinogenesis, COX2, NF- κ B, inflammation.