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# 1176 – MicroRNA dysregulation and endocrine disruptors in breast cancer: molecular implications for tumor progression

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Breast cancer is one of the most common malignancies among women worldwide and its development involves genetic, hormonal and environmental factors. MicroRNAs (miRNAs) are small non-coding RNAs that regulate gene expression at the post-transcriptional level and play important roles in tumorigenesis. Altered miRNA expression has been associated with cell proliferation, apoptosis, invasion and metastasis in breast cancer. Endocrine disruptors with estrogenic activity, such as Bisphenol A, may also influence tumor progression by modulating miRNA expression in breast cancer cells. A literature-based analytical study was conducted to evaluate the role of miRNAs in breast cancer progression and the potential modulation of these molecules by endocrine disruptors. Scientific studies investigating miRNA expression in breast cancer and experimental studies evaluating the effects of endocrine disruptors on miRNA regulation in breast carcinoma cells were analyzed. Several miRNAs show altered expression in breast tumors and are associated with tumor behavior. Among them, miR-21 is frequently upregulated and has been linked to increased invasive capacity through negative regulation of tumor suppressor genes such as TIMP3. Additionally, miR-204 has been implicated in tumor aggressiveness and vasculogenic mimicry through regulation of targets including CREB5. Experimental evidence also indicates that endocrine disruptors can alter the miRNA expression profiles in breast cancer cell lines, including MCF-7 cells. MicroRNAs play an important role in molecular mechanisms associated with breast cancer progression, therefore understanding how endocrine disruptors influence miRNA regulation may contribute to identifying molecular biomarkers and potential therapeutic targets.

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**Keywords:** breast neoplasms; MicroRNAs; bisphenol A; endocrine disruptors.