



Isfahan University of Medical Sciences

Faculty of medicine

thesis on special medicine in pathology

Subject:

The Study of Relationship between cyclin D1 overexpression and clinicopathological prognostic factors in breast invasive ductal carcinoma

Isfahan university of medical science , department of pathology ,
Isfahan , Iran

Number:388248

By:Dr.mohsen hani

Supervisor:

Dr.fereshteh mohamadizadeh(associate professor of pathology)

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Abstract

Background- Cyclin D1 level begins to rise early in G1 phase of cell cycle and continues to accumulate until the G1/S-phase boundary, when the level rapidly declines. Cyclin D1 is one of the most commonly overexpressed oncogenes in breast cancer. This study was designed to determine the relationship between cyclin D1 overexpression and clinicopathological prognostic factors in breast invasive ductal carcinoma.

Methods- In this descriptive-analytical cross-sectional investigation, 89 patients with invasive ductal breast cancer attending to Alzahra Hospital, Isfahan, Iran from 2003 to 2008 entered the study. Cyclin D1 staining was performed on paraffin- embedded tumor tissue samples and the relationship between cyclin D1 status and age, tumor grade, tumor stage, estrogen receptor (ER), progesterone receptor (PR), and HER2- Neu status was evaluated.

Results- Cyclin D1 status was intermediate (I), strong (S), negative (N), and weak (W) in 44.9%, 19.1%, 21.3%, and 14.6% of cases, respectively. There was no relationship between cyclin D1 status on one hand and age, tumor stage, and HER2- Neu status on the other. Cyclin D1 status showed statistically significant relationship with tumor grade, ER, and PR status. Higher scores of cyclin D1 expression were more frequent in lower tumor grade and tumors with positive ER and PR.

Conclusion- According to the obtained results, it seems that overexpression of cyclin D1 in breast cancer is associated with some favorable prognostic factors including lower grade and ER and PR positive status.

Key words: cyclin D1- breast cancer- immunohistochemistry

List of table

<i>Title</i>	<i>Page</i>
Table 1- The frequency distribution of age... Table	69
2- The frequency distribution of grade ...	70
Table 3- The frequency distribution of stage ...	71
Table 4- The frequency distribution of PR ...	72
Table 5- The frequency distribution of ER ...	73
Table 6- The frequency distribution of HER2neu	74
Table 7- The frequency distribution of Cyclin D1 ...	75
Table 8- Association of age and Cyclin D1	76
Table 9- Association of grade and Cyclin D1	77
Table 10- Association of stage and Cyclin D1	78
Table 11- Association of progesterone ...	79
Table 12- Association of estrogen receptor	80
Table 13- Association of HER2-neu	81

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چکیده فارسی

مقدمه: سطح سیکلین D1 در مراحل اولیه فاز G1 چرخه سلولی شروع به بالا رفتن می کند و تا حد فاصل مرحله G1 و S سطح آن به سرعت کم می شود. سیکلین D1 یکی از رایجترین انکوژن هایی است که در سرطان سینه overexpressed می شود. این مطالعه به منظور تعیین ارتباط بین overexpression سیکلین D1 و عوامل پروگنوستیک بالینی و پاتولوژیک در سرطان مهاجم داکتال سینه انجام شده است.

روش مطالعه: در این مطالعه توصیفی - تحلیلی مقطعی ۸۹ بیمار مبتلا به سرطان مهاجم داکتال سینه که طی سالهای ۱۳۸۲ تا ۱۳۸۷ به بیمارستان الزهرا در شهر اصفهان مراجعه نموده بودند، مورد بررسی قرار گرفتند. رنگ آمیزی سیکلین D1 بر روی نمونه های قرار داده شده در پارافین انجام شد و ارتباط آن با سن، درجه و مرحله تومور و وضعیت گیرنده های استروژنی، پروژسترونی و HER2-Neu ارزیابی شد.

یافته ها: سیکلین D1 در ۴۴/۹ درصد متوسط، در ۱۹/۱ درصد قوی، در ۲۱/۳ درصد منفی و در ۱۴/۶ درصد ضعیف بود. ارتباط آماری معناداری بین سیکلین D1 و سن، مرحله تومور و وضعیت HER2-Neu وجود نداشت. سیکلین D1 ارتباط آماری معناداری با درجه تومور و وضعیت گیرنده های استروژنی و پروژسترونی داشت و سطوح بالاتر سیکلین D1 در تومورهای با درجه پایین تر و تومورهای با گیرنده استروژنی و پروژسترونی مثبت دیده می شد.

نتیجه گیری: بر اساس نتایج حاصله، به نظر می رسد overexpression سیکلین D1 در سرطان سینه در همراهی با برخی از فاکتورهای پروگنوستیک مطلوب مانند درجه پایین تر تومور و سطح گیرنده های استروژنی و پروژسترونی بالاتر است.

واژه های کلیدی: سیکلین D1، سرطان سینه، IHC