Abstract: P3

The oestrogen receptor in epithelial ovarian carcinoma

V. Muzio [a], T. Mennini [a], G. Brancatelli [b], P. Donesana [b], L. Grassi [b], F. Fei [b], M. Zoccatelli [b], V. Torri [a], C. Mangioni [b], M. D'Incalci [a,*]

[a] *Istituto di Recerche Farmacologiche 'Mario Negri', Via Eritrea, Milan 20157, Italy*
[b] *Clinica Ostretica e Ginecologica, Ospedale San Gerardo, Monza (MI), Italy*

1. Introduction

Despite the fact that the ovary is not a primary target tissue for oestrogen, the presence of the oestrogen receptor (ER) in epithelial ovarian carcinoma has been known for a long time to be positively associated with better survival [1]. In the study by Bizzi and colleagues, the patients' clinical stages were classified as III and IV, and 55% of the total tumours ($n = 97$) were found to be ER-positive (receptor density > 10 fmol/mg protein) [1].

2. Object

In the present study, we extended these observations to stage I and II tumours, in order to verify a possible inverse correlation between the presence of the ER and the clinical stage.

3. Materials and methods

Human ovarian cancer surgical biopsies ($n = 22$) were obtained from Ospedale San Gerardo, Monza (Milano), and stored at $-80°C$ until the day of assay. The presence or absence of ER was determined by the dextran coated charcoal method. Briefly, cytosols (200–300 μg proteins) from sample homogenates were incubated overnight at 4°C with 0.04–0.66 nM of labelled [^{3}H]oestradiol (specific activity 84 Ci/mmol). Non-specific binding was determined with a 100-fold molar excess of unlabelled diethylstilboestrol. After addition of dextran-coated charcoal, samples were centrifuged, and supernatants were counted for the radioactivity in a β-counter (LKB Wallac 1214 Rackbeta) with a counting efficiency of approximately 60%. K_d and B_{max} were calculated from saturation curves using the Ligand program running on an IBM-AT-PC.

4. Results

We found that, in a total of 9 patients with stage I–II and 13 patients with stage III–IV tumours, 33% and 62% were ER-positive, respectively. The latter result confirms the previous data reported by Bizzi and colleagues (55% ER-positive cases in stage III–IV patients). In addition, in the present study we found that the frequency of undetectable ER was 45% in stages I–II and 0% in stages III–IV. These preliminary results, although obtained in a small sample size, strongly suggest that the presence of ER is inversely related to the clinical stage.

5. Conclusion

If these data are confirmed in a larger series of patients, they indicate that ER levels of expression are a marker of tumour progression and bad prognosis of ovarian cancer. The biological mechanisms underlying this finding are still unclear and require further studies.

References

1. Bizzi A, *et al. Cancer Res* 1996, **48**, 6222–6226.

* Corresponding author. Tel.: +39-2-3901-4473.
E-mail address: dincalci@irfmn.mnegri.it (M. D'Incalci).

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