Preliminary Study on the Significance of BRCA1 and PARP1 Immunohistochemical Expression in Ovarian Cancer

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Abstract

Role of BRCA1 and PARP1 has been studied by immunohistochemistry in a cohort of ovarian cancers. Their
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MRN, RAD51, ATR, ATM, e FANCC) creates a synthetic lethality with PARP1 inhibition is evidence, independently of the genetic lesion, for the expansion of the group of patients with a right to treatment by PARP1 inhibitors [12,13].

Recently, interest has mainly been concentrated on the loss of PTEN as a determining factor for the characteristics of BRCA-like tumours which show susceptibility to PARP1 inhibitors and agents harmful to DNA [14,15]. However, these observations remain controversial [16-18].

ese developments have however taken place with little understanding of the pharmacological mechanisms involved and above all with no assessment of the mechanisms of pre-selection of those women candidates for anti-Parp treatment.

e belief that high-grade ovarian cancer are to be considered as homologous to triple negative breast cancer [1] has no basis in reality in that approximately 2/3 of ovarian tumours have oestrogen receptors [19] and anti-PARP treatment in breast cancer was less e ect]ve than in ovarian cancer.

Since there is very little information on the possibility of immunohistochemically documenting the expression of BRCA and PARP, we decided to undertake a multicentre study to test the possibility of def n]n[the expression of the two proteins, assess the characteristics of the patients involved and eventually draw operating conclusions for a treatment plan.

Methods

Patients recruitment

A cohort of 111 patients with ovarian cancer was recruited, diagnosed at the Department of Pathology at University of Bari (I) (77 patients) and at Pathology Division, Catholic University of Rome (I) (34 patients) between the years of 2010 to 2016. e study 2 ween mnc a e
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Figure 1: A) HGSC: D] use and intense nuclear immunopositivity for BRCA1 (anti-BRCA1, 200 X original ma[n]f cat]onŁ and **B)** PARP1 (anti-PARP1, 200 X original ma[n]f cat]onŁ.

Results

In Table 1 are detailed the clinic-pathologic data of patients enrolled for the study. Tables 2 and 3 show the relationship between expression of BRCA1/PARP1 and clinic-pathological features.

	Count (%)
Age, mean (range)	55, 8 [31-83]
55, 8	60 (54)
>55, 8	51 (46)
Histology	
High grade seous (HGSC)	69 (62)
Low grade serous (LGSC)	6 (5)
Mucinous (MC)	5 (5)
Clear cell (CCC)	18 (16)
Endometrioid (EC)	13 (12)
FIGO staging	
I	34 (31)
II	17 (15)
III	59 (53)
IV	1 (1)
Follow-up	
survivors	69 (62)
died	28 (25)
Lost to follow-up	14 (13)
Survival (months)	40 [0-145]
40	50 (45)
>40	47 (42)

Figure 3: Kaplan-Meier curves compare the overall survival among ovarian cancer with BRCA and PARP positivity in all cases (A and

Our data are still in an initial and experimental phase and many other studies of many cases are needed to reach any reliable conclusions.

7on]W̌s of Interest

Leonardo Resta, Maria Arcangela Cascarano, Gennaro Cormio, Gianfranco Zannoni, Damiano Arciuolo, Gabriella Serio and Andrea Marzullo have no conf]ct of interest.

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