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CORRESPONDENCE

Response to: Re: 'Development of a risk score based on clinical—pathological features to predict the presence of germline BRCA1/2 pathogenic variants in ovarian cancer patients'

We would like to thank Dr Shuyi Liu and Dr Xuewei Wu[1] for the interest shown in our paper: 'Development of a risk score based on clinical—pathological features to predict the presence of germline BRCA1/2 pathogenic variants in ovarian cancer patients'.[2]

We also thank them for highlighting two important issues in our paper and for giving us the opportunity to address their concerns through additional analyses. With regard to the exclusion of the International Federation of Gynecology and Obstetrics (FIGO) stage from the predictive score, this was based on the results of a logistic regression model which was not included in the paper. This model included the main effect of the FIGO stage and the interaction term 'FIGO stage × family history of ovarian cancer'. In this model, neither the regression coefficient for FIGO stage nor that for the interaction term was significant, as shown below (Table 1).

Regarding the weights assigned to the variables included in the predictive score, we decided to reduce some of them due to the high variability of the odds ratios, which suggests a cautious approach at the expense of fidelity to the model. However, we acknowledge that our decision was arbitrary and have considered running machine learning (ML) models to confirm the validity of the score. The results of the ML models, which were based on boosting, random forest and support vector machine algorithms (G Innella et al., unpublished data), confirmed the importance of the variables family history of ovarian cancer and histotype, and the peripheral role of FIGO stage.

Nevertheless, our predictive model yet requires validation and, possibly, further improvement; thus, we really appreciate those thoughtful comments, as well as the opportunity to critically reanalyze our data.

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Table 1. Results of a logistic regression model showing the effects of FIGO stage and of the interaction term FIGO stage × family history of OC

		B	SE	Wald test	*df*	Sig.	Exp(B)	95% CI for Exp(B)	
								Lower	Upper
Step 1[a]	Age <50 years	0.927	0.250	13.750	1	<0.001	2.526	1.548	4.122
	Family history of OC (1)	1.743	0.545	10.234	1	0.001	5.715	1.964	16.625
	Family history of BC (1)	0.557	0.217	6.596	1	0.010	1.745	1.141	2.669
	Personal history of BC (1)	1.286	0.319	16.248	1	<0.001	3.617	1.936	6.758
	Histotype			18.385	2	<0.001			
	Histotype (1)	3.841	1.037	13.716	1	<0.001	46.589	6.101	355.776
	Histotype (2)	2.767	1.107	6.251	1	0.012	15.918	1.819	139.330
	FIGO stage (1)	−0.077	0.313	0.060	1	0.806	0.926	0.501	1.711
	FIGO stage (1) by family history of OC (1)	0.755	0.646	1.364	1	0.243	2.127	0.600	7.543
	Constant	−5.660	1.043	29.418	1	<0.001	0.003		

BC, breast cancer; CI, confidence interval; FIGO, International Federation of Gynecology and Obstetrics; OC, ovarian cancer; SE, standard error.
[a] Variable(s) entered on step 1: age <50 years, family history of OC, family history of BC, personal history of BC, histotype, FIGO stage, FIGO stage × family history of OC.

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DISCLOSURE

The authors have declared no conflicts of interest.

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