# Corrigendum: Serum Biomarker Panel for Diagnosis and Prognosis of Pancreatic Ductal Adenocarcinomas

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**A Corrigendum on**

**Serum Biomarker Panel for Diagnosis and Prognosis of Pancreatic Ductal Adenocarcinomas**
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In the original article, there was a mistake in **Figures 2**, **3**, **Supplementary Figure 1** and **Table 1**. There was an error in the survival data for some patients which has slightly modified curves. The corrected **Figures 2**, **3**, **Supplementary Figure 1** and **Table 1** appears below.

In the original article, there was an error. The stated median survival and p value of survival analysis were incorrect. A correction has been made to *Results, Survival Analysis Based on Serum Biomarker Levels paragraph 1 and 2*:

"Survival correlation with abnormal serum biomarker levels were determined using Kaplan Meier curves. Abnormal serum levels of S100A4 (median survival (m.s.): 28.92 *vs* 23.29 months; **Figure 2**), Ca-125 (m.s.: 26.15 *vs* 22.18 months; **Figure 2**) and Ca19-9 (m.s.: 28.92 *vs* 23.49 months; **Figure 2**) led to reduction in the median overall survival time. In contrast, abnormal serum levels of S100A2 resulted in increased median survival time (m.s.: 23.72 *vs* 26.35 months; **Figure 2**). However, none of the biomarkers individually corresponded with overall survival.

The panel of S100A4, Ca-125 and Ca 19-9 was further analysed to determine its ability to stratify patients based on their overall survival. Initially, patients were divided into four groups: (1) none of the biomarkers with abnormal levels (n = 6); (2) one biomarker with abnormal levels (n = 31); (3) two biomarkers with abnormal levels (n = 56); (4) three biomarkers with abnormal levels (n = 27). Multiple comparison Kaplan Meier curve analysis did not achieve statistical significance (p = 0.121; **Supplementary Figure 1**), potentially due to very small number of patients in some categories. The combination of first two and last two categories was able to stratify patients based on their overall survival (**Figure 3**). The patients with abnormal levels of one or less of the biomarker (n = 37) had significantly improved survival outcomes, compared to those with abnormal levels of two or more biomarkers (n = 83; m.s.: 36.76 *vs* 20.02 months, p = 0.018; **Figure 3**). Patient distribution based on tumour characteristics
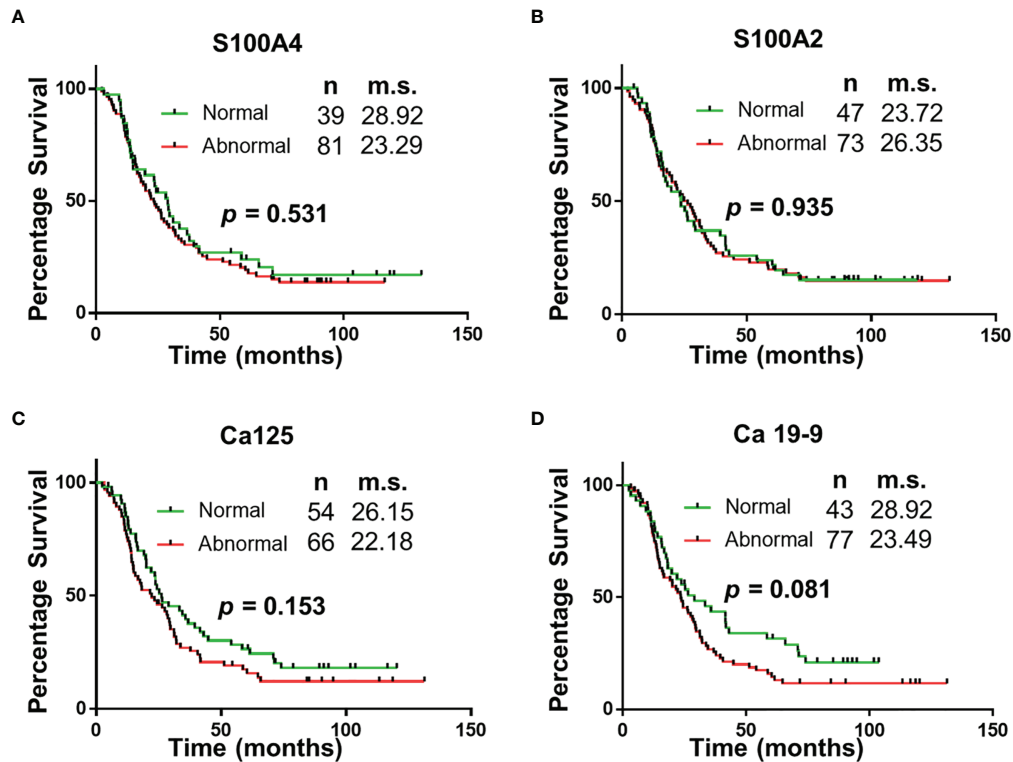
**FIGURE 2** | Univariable Survival Analysis of Individual Biomarkers. **(A–D)** Kaplan Meier survival curves for individual biomarkers were generated using prognostic cut-offs (**Supplementary Table 3**). n, number of patients; m.s., median survival in months.
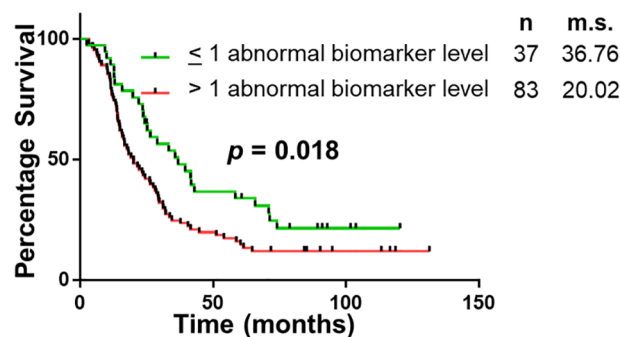


**FIGURE 3** | Univariable Survival Analysis of Biomarker Panel. Kaplan Meier survival curves comparing patients with abnormal biomarker levels of one or less biomarker and patients with abnormal biomarker levels of two or more biomarkers. n, number of patients; m.s., median survival in months.

was also analysed (**Supplementary Table 4**), which showed uniform distribution in both biomarker groups".

In the original article, there was an error. The stated median survival was incorrect. A correction has been made to **Discussion, paragraph 1**:

"The study demonstrates that of the select group of biomarkers included in this study, a panel of four (S100A4,

S100A2, Ca-125 and Ca 19-9) have superior diagnostic potential compared to the current biomarker used in clinical practice, Ca 19-9 alone. Additionally, the abnormal expression of two or more biomarkers correlated with worse survival (median survival: 36.76 vs 20.02 months; p < 0.05). The utility of this biomarker panel in the accurate diagnosis of PDAC and implications of biomarker expression on prognosis

**TABLE 1 |** Patient and tumour characteristics and correlation with survival status.

| | Total n (%) | HR | 95% CI | p-value |
|---|---|---|---|---|
| Age | | | | 0.237 |
|   <70 years | 72 (60.0) | Reference | | |
|   ≥70 years | 48 (40.0) | 1.27 | 0.85-1.90 | |
| Gender | | | | 0.706 |
|   Male | 61 (50.8) | Reference | | |
|   Female | 59 (49.2) | 0.93 | 0.62-1.38 | |
| Tumour size | | | | 0.009 |
|   <35mm | 55 (45.8) | Reference | | |
|   ≥35mm | 65 (54.2) | 1.70 | 1.14-2.55 | |
| T Stage | | | | 0.041 |
|   T1 & T2 | 9 (7.5) | Reference | | |
|   T3 & T4 | 111 (92.5) | 2.56 | 1.04-6.33 | |
| Node Positive | | | | 0.001 |
|   No | 26 (21.7) | Reference | | |
|   Yes | 94 (78.3) | 2.68 | 1.51-4.76 | |
| Vascular Invasion | | | | <0.001 |
|   No | 46 (38.3) | Reference | | |
|   Yes | 74 (61.7) | 2.49 | 1.61-3.87 | |
| Perineural Invasion | | | | 0.024 |
|   No | 38 (31.7) | Reference | | |
|   Yes | 82 (68.3) | 1.66 | 1.07-2.58 | |
| Grade | | | | 0.021 |
|   0 or 1 | 84 (70.0) | Reference | | |
|   2 or 3 | 36 (30.0) | 1.65 | 1.08-2.54 | |
| Blood loss | | | | 0.873 |
|   <450mL | 52 (43.3) | Reference | | |
|   ≥450mL | 68 (56.7) | 1.03 | 0.69-1.54 | |
| Length of stay | | | | 0.347 |
|   <12 days | 45 (37.5) | Reference | | |
|   ≥12 days | 75 (62.5) | 0.82 | 0.54-1.24 | |
| Margin Status | | | | 0.002 |
|   R0 | 49 (40.8) | Reference | | |
|   R1 | 71 (59.2) | 1.89 | 1.25-2.85 | |

may assist with personalization of treatment and improved survival outcomes".

The authors apologize for these errors and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

## SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fonc.2021.774861/full#supplementary-material

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