Addendum: Metabolic Syndrome, and Particularly the Hypertriglyceridemic-Waist Phenotype, Increases Breast Cancer Risk, and Adiponectin Is a Potential Mechanism: A Case–Control Study in Chinese Women

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Keywords: breast cancer, metabolic syndrome, hypertriglyceridemic-waist phenotype, adiponectin, risk

An Addendum on

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by Xiang, Y., Zhou, W., Duan, X., Fan, Z., Wang, S., Liu, S., et al. (2020) Front. Endocrinol. 10:905. doi: 10.3389/fendo.2019.00905

In the original article, there were mistakes in Table 6, Table 7, Table 9 as published. The numbers of patients in Table 6 and Table 9 were incorrect. The contents in Table 7 and Table 9 were repetitive to some degree in that we had shown the association between adiponectin with metabolic syndrome and HW phenotype. Therefore, for this Correction, we analyzed...
the association between adiponectin and metabolic syndrome, and the association in pre- and postmenopausal subgroups in Table 7. In Table 9, we converted the numerical variable into categorical variable, which should provide better guide for clinical practice. In our view, this avoids the repetition. These new tables appear below as Tables 6, 7, 9. The authors apologize for these errors and any confusion that may have arisen due to them and hopes these additional tables sufficiently addresses them.

In the original article, corresponding text of Table 6, Table 7, and Table 9 was corrected. A correction has been made to Abstract, Results, Paragraph number 1:

In addition, total adiponectin levels among breast cancer patients were much lower than among controls \((p = 0.005)\) only in the HW phenotype subgroup. Furthermore, the HW phenotype was associated with increased risk of estrogen receptor/progesterone receptor-positive (ER+/PR+) breast cancer, with a 95\% \((OR = 1.95, 95\% CI: 1.21–3.13)\) increase. However, there was no significant association between the HW phenotype and both ER+/PR– and ER–/PR– subtypes.

A correction has been made to Results, Cluster Mode of HW Phenotype Significantly Increases Breast Cancer Risk, Paragraph number 3:

HW phenotype was associated with ER+/PR+ breast cancer, with a 95\% \((OR = 1.95, 95\% CI: 1.21–3.13)\) increase in risk for women with a positive HW phenotype. However, there was no significant association between HW phenotype and both ER+/PR– and ER–/PR– subtypes.

A correction has been made to Results, Adiponectin Might Be the Mechanism Linking Metabolic Syndrome to Breast Cancer, Paragraph number 2:

total adiponectin levels among breast cancer patients were much lower than among the controls \((p = 0.005)\) in the HW phenotype subgroup.

A correction has been made to Results, Adiponectin Might Be the Mechanism Linking Metabolic Syndrome to Breast Cancer, Paragraph number 3:

there was a significant difference of total adiponectin in ER+/PR+ \((p = 0.028)\) and ER–/PR– \((p = 0.043)\) breast cancer compared to the controls, who were much lower in the HW phenotype subgroup.

A correction has been made to Discussion, Paragraph number 6:

We revealed that HW phenotype was an independent risk factor for the ER+/PR+ subtype.

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

**TABLE 6** | Association between HW phenotype and breast cancer by logistic regression.

|                      | All subjects \((n = 595)\) | Premenopausal \((n = 383)\) | Postmenopausal \((n = 209)\) |
|----------------------|-----------------------------|-----------------------------|-----------------------------|
|                      | OR 95% CI P                  | OR 95% CI P                  | OR 95% CI P                  |
| **Univariate model** |                             |                             |                             |
| WC, TG (reference)   | 1.66 1.10–2.50 0.016         | 1.63 0.98–2.42 0.077         | 1.72 0.91–3.22 0.049         |
| WC+TG               | 1.66 1.10–2.50 0.016         | 1.63 0.98–2.42 0.077         | 1.72 0.91–3.22 0.049         |
| WC+TG (normal)       | 1.56 1.02–2.39 0.038         | 1.49 0.85–2.63 0.167         | 1.60 0.82–3.12 0.170         |
| Multivariate model \(a\) |                             |                             |                             |
| WC, TG (reference)   | 1.70 1.07–2.70 0.006         | 1.64 0.99–2.62 0.031         | 1.73 0.99–3.31 0.007         |
| WC+TG               | 1.70 1.07–2.70 0.006         | 1.64 0.99–2.62 0.031         | 1.73 0.99–3.31 0.007         |
| WC+TG (normal)       | 1.58 1.02–2.39 0.032         | 1.49 0.85–2.63 0.167         | 1.60 0.82–3.12 0.170         |

WC, waist circumference; TG, triglycerides; ER, estrogen receptor; PR, progesterone receptor. 

\(a\)Adjusted for age, number of childbirths, age at menarche, smoking, alcohol use, family history of breast cancer, and contrceptive drug use.
TABLE 7 | Association between total adiponectin, HMW adiponectin, HMW/total ratio, and metabolic syndrome.

|                      | All subjects | Premenopausal | Postmenopausal |
|----------------------|--------------|---------------|---------------|
|                      | With MetS    | Without MetS  | p             | With MetS    | Without MetS  | p             | With MetS    | Without MetS  | p             |
| Total adiponectin    | 5.970 ± 3.789| 2.807 ± 2.007 | 0.004         | 5.960 ± 3.830| 6.637 ± 3.558| 0.054         | 5.979 ± 3.762| 6.909 ± 3.875| 0.022         |
| HMW adiponectin      | 2.408 ± 1.870| 2.807 ± 2.007 | 0.004         | 2.371 ± 1.830| 2.757 ± 1.958| 0.037         | 2.445 ± 1.915| 2.935 ± 2.116| 0.024         |
| HMW/total ratio      | 0.39 ± 0.14  | 0.41 ± 0.16   | 0.101         | 0.39 ± 0.14  | 0.40 ± 0.17   | 0.233         | 0.39 ± 0.15  | 0.42 ± 0.15   | 0.150         |

MetS, metabolic syndrome; HMW, high molecular weight.

TABLE 9 | The association among metabolic syndrome, breast cancer, and adiponectin.

|                      | Controls | All cases | ER+/PR+ | ER+/PR− | ER−/PR− |
|----------------------|----------|-----------|---------|---------|---------|
|                      |          |           |         |         |         |
| METABOLIC SYNDROME   |          |           |         |         |         |
| YES                  |          |           |         |         |         |
| Total adiponectin    | 0.362    | 0.944     | 0.764   | 0.023   |         |
| High                 | 26 (22.2%) | 27 (17.8%) | 17 (21.8%) | 3 (15.8%) | 5 (12.8%) |
| Low                  | 91 (77.8%) | 125 (82.2%) | 61 (78.2%) | 16 (84.2%) | 34 (87.2%) |
| HMW adiponectin      | 0.296    | 0.597     | 0.113   | 0.403   |         |
| High                 | 66 (56.4%) | 76 (50.0%) | 41 (52.6%) | 7 (36.8%) | 19 (48.7%) |
| Low                  | 51 (43.6%) | 76 (50.0%) | 37 (47.4%) | 12 (63.2%) | 20 (51.3%) |
| HMW/total ratio      | 0.354    | 0.069     | 0.805   | 0.711   |         |
| High                 | 59 (50.4%) | 66 (44.7%) | 29 (37.2%) | 9 (47.4%) | 21 (53.8%) |
| Low                  | 58 (49.6%) | 84 (55.3%) | 49 (62.8%) | 10 (52.6%) | 18 (46.2%) |
| No                   | 0.097    | 0.121     | 0.339   | 0.118   |         |
| Total adiponectin    | 106 (25.5%) | 92 (20.8%) | 43 (20.0%) | 13 (32.5%) | 20 (18.3%) |
| High                 | 309 (74.5%) | 351 (79.2%) | 172 (80.0%) | 27 (67.5%) | 89 (81.7%) |
| HMW adiponectin      | 0.507    | 0.970     | 0.588   | 0.244   |         |
| High                 | 287 (69.2%) | 297 (67.0%) | 149 (69.3%) | 26 (65.0%) | 69 (63.3%) |
| Low                  | 128 (30.8%) | 146 (33.0%) | 66 (30.7%) | 14 (35.0%) | 40 (36.7%) |
| HMW/total ratio      | 0.359    | 0.229     | 0.873   | 0.062   |         |
| High                 | 213 (51.3%) | 213 (48.2%) | 99 (48.3%) | 20 (50.0%) | 45 (41.3%) |
| Low                  | 202 (48.7%) | 229 (51.8%) | 115 (53.7%) | 20 (50.0%) | 64 (58.7%) |
| HW PHENOTYPE         |          |           |         |         |         |
| YES                  |          |           |         |         |         |
| Total adiponectin    | 0.005    | 0.028     | 1.000   | 0.043   |         |
| High                 | 14 (35.9%) | 9 (13.0%)  | 6 (14.6%) | 2 (28.6%) | 1 (6.7%) |
| Low                  | 25 (64.1%) | 60 (87.0%) | 35 (85.4%) | 5 (71.4%) | 14 (93.3%) |
| HMW adiponectin      | 0.717    | 0.527     | 0.424   | 0.583   |         |
| High                 | 24 (61.5%) | 40 (58.0%) | 28 (68.3%) | 3 (42.9%) | 8 (53.3%) |
| Low                  | 15 (38.5%) | 29 (42.0%) | 13 (31.7%) | 4 (57.1%) | 7 (46.7%) |
| HMW/total ratio      | 0.570    | 0.263     | 1.000   | 0.839   |         |
| High                 | 17 (43.6%) | 34 (49.3%) | 23 (56.1%) | 3 (42.9%) | 7 (46.7%) |
| Low                  | 22 (56.4%) | 35 (50.7%) | 18 (43.9%) | 4 (57.1%) | 8 (53.3%) |
| NO                   | 0.247    | 0.442     | 0.632   | 0.150   |         |
| Total adiponectin    | 118 (23.9%) | 110 (20.9%) | 54 (21.4%) | 14 (26.9%) | 24 (18.0%) |
| High                 | 375 (76.1%) | 416 (79.1%) | 198 (78.6%) | 38 (73.1%) | 109 (82.0%) |
| Low                  | 329 (66.7%) | 333 (63.3%) | 162 (64.3%) | 30 (57.7%) | 80 (60.2%) |
| HMW adiponectin      | 0.252    | 0.505     | 0.191   | 0.157   |         |
| High                 | 164 (33.3%) | 193 (36.7%) | 90 (35.7%) | 22 (42.3%) | 53 (39.8%) |
| Low                  | 0.136    | 0.011     | 0.813   | 0.132   |         |
| High                 | 255 (51.7%) | 247 (47.0%) | 105 (41.8%) | 26 (50.0%) | 59 (44.4%) |
| Low                  | 238 (48.3%) | 278 (53.0%) | 146 (58.2%) | 26 (50.0%) | 74 (55.6%) |

ER, estrogen receptor; PR, progesterone receptor.

Cut-off value of high and low level for total adiponectin, HMW adiponectin, and HMW/total ratio is 8.768, 1.635, and 0.399, respectively.