

SELINA – all cause mortality decreased by selenium blood level optimization

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Acknowledgements: Putresza E, Gibaszek R

Grant: INNOMED/I/16/NCBR/2014

SELINA is a clinical study on influence of selenium blood levels optimization on cancer occurrence and all cause mortality in females from families with increased risk of hereditary breast cancers.

7456 women at the age of at least 40 years have been recruited from centers in Poland. According to planned protocol, 40 months after recruitment, decoding for safety reason was performed. Compliance rate was 81%. Intervention did not cause undesired effects in any arm.

By contrast, in some sub-groups very promissive correlations have been found. The strongest positive effects were noted in subgroups of BRCA1(-) (without occurrence of Polish founder constitutional mutations): Selenium deficiency (blood level <98µg/l) on supplement Sel-BRCA1® (ethanol solution of sodium selenite), placebo or diet and selenium excess (blood level >108µg/l) on diet. In all above subgroups combined, all cause mortality was decreased more than 3 times in females who achieved blood Selenium level 98-108 µg/l 5 and 1162 vs 35 and 2509; p=0.0154, OR=3.2, CI = 1.3-8.3. The greatest effect was achieved in subgroup supplemented with Sel-BRCA1®: 1 and 346 vs 12 and 396; p=0.0044, OR=10.5, CI=1.4-81.1. The risk of cancers was decreased provided Arsenic levels were added to analyses. The index risk was created of Se level (µg/l) plus As level multiplied by 50.

In subgroup of females under the age of 50, risk index 125-145 was correlated with more than 5 times decreased risk of cancers: 2 and 610 vs 21 and 966; p=0.0021, OR=6.6, CI=1.5-28.4.