EFFECT OF PROBIOTIC PRODUCT LAKTERA VISION WITH LACTOBACILLUS BULGARICUS AND EXTRACT OF BILBERRY ON THE SYNDROME OF DRY AND TIRED EYE

Hristina Vidinova, Marieta Georgieva, Georgy Aleksandrov

1MMA Sofia,
2Department of Preclinical and Clinical Pharmacology and Toxicology, Medical University of Varna “Prof. Paraskev Stoyanov”

ABSTRACT

Technology development and penetration of computers in life lead to refractive anomalies of the eyes in more young people. Excessive congestion of eyes at a young age led to the occurrence of new syndromes in ophthalmology – dry eye syndrome and tired eye syndrome.

Purpose of this study is to examine the effect of bilberry on the vision of young people.

Object of observation were 41 people aged between 21 and 44 years (men and women). All of them wear glasses for vision correction and work in offices from 4 to 9 hours a day in front of computers an average 5 hours a day. All wear anti-reflecting glasses while working on a computer. Most frequent syndromes that occur in these people are the dry eye syndrome and the tired eye syndrome.

The study was carried out within 8 weeks (56 days). 35 of people have taken 2 capsules Laktera Vision every day before meal. 6 of the observed people have taken Laktera Vision irregularly – on average 2.5 times a week. After administration of the product manifestations of the syndromes are put under control for a period of 12 – 24 hours.

The probiotic product with bilberry extract controls successfully the syndromes of dry and tired eye, occurring in young people wearing glasses for vision correction, who work on a computer more than 4 hours a day.

Key words: probiotics, Laktera, Lactobacillus bulgaricus, extract of bilberry, syndrome of dry and tired eye

INTRODUCTION

Technology development and penetration of computers in life lead to refractive anomalies of the eyes in more young people and they start to wear glasses or lenses for vision correction at a young age, before the occurrence of age-related changes (presbyopia). Excessive congestion of eyes at a young age led to the occurrence of new syndromes in ophthalmology – dry eye syndrome and tired eye syndrome. There are lots of myths as well as lots of studies for the positive effect of bilberry on the eye health (10).

Bilberry (vaccinium myrthilus) is a perennial shrub with a height up to 35 cm, which grows in forests and mountain regions of Northern Europe, West Asia and North America. Its fruit are small with a black-violet colour and a pleasant sweet sour taste (10,12) (fig. 1).
The ancient Roman army physician Pedanius Dioscorides (40 AD), who is considered to be the founder of botany, in his book „De materia medica“ recommends bilberry in treatment of diarrhea and scurvy.

100 g bilberry fruit contain 86.5 g water, 1.1 g proteins, 8.6 g carbohydrates, 2.2 g fibres, 1.2 g free organic acids, 51 mg potassium, 6 mg sodium, 16 mg calcium, 6 mg magnesium, 13 mg phosphorus, 7 mg iron, 0.9 mg copper, 0.01 mg Vit. B1, 0.02 mg Vit. B6, 0.3 mg Vit. PP, 10 mg Vit. C. They are very rich in anthocyanides from the group of flavonoids (10,12). Anthocyanides are very important for the eye health. Eye lens and retina are exposed to prolonged intense light radiation and singlet oxygen more than any other tissue in the human body. Thus free radicals are formed and they combine with the lipids in the photoreceptor cell membrane (rods and cones), responsible for vision. To keep the eye tissue healthy it must have an effective antioxidant protection. Anthocyanides in the bilberry are powerful antioxidants and help in the fight against cellular degeneration of the retinal cells caused by free radicals. Anthocyanides help to maintain the normal blood flow in the fine blood vessels (capillaries) that feed the eye tissues (9) (fig. 2).

Bilberry is often associated with the improvement of vision at night (11). The story that during the World War II pilots have taken bilberry jam to sharpen their vision in night missions is very popular. An American clinical study in 2000 on pilots from the U.S. Navy didn’t find such effect.

Experimental research of rats show that the use of bilberry extract can inhibit the development of macular degeneration and senile cataracts (3).

**MATERIAL AND METHODS**

Object of observation were 41 people aged between 21 and 44 years. 24 of them were men and 21 - women. All of them wear glasses for vision correction, as 17 (41.46%) are shortsighted with dioptre from -0.5 to -3d, and 24 (58.54%) are farsighted with dioptre + 0.5 to + 2d. 28 (68.29%) of them are with astigmatism. 24 (58.13%) of them wear glasses and lenses for vision correction. All of them work in offices (government officials, IT specialists, accountants, etc.) from 4 to 9 hours a day in front of computers an average 5 hours a day. All wear anti-reflecting glasses while working on a computer.

Most frequent syndromes that occur in these people are the dry eye syndrome and the tired eye syndrome. The dry eye syndrome manifests with reduced production of tears, irritation and itching of eyes. The syndrome of tired eye which is a kind of dryness of eyes occurs after continuous work on a computer with red eyes, marking and expansion of capillaries, blurred vision.

The study was carried out within 8 weeks (56 days). Thirty-five of people have taken 2 capsules Laktera Vision (6,5,4,1,2,7,8). They have taken 2 capsules Laktera Vision every day before meal. Six of the observed people have taken Laktera Vision irregularly – on average 2.5 times a week. Each capsule (270 mg) contains over 5 million live cells of Lactobacillus delbrueckii spp. Bulgaricus DWT1, Streptococcus thermophilus DWT4-8, Lactobacillus helveticus DWT 2, Lactobacillus lactis DWT 3 (isolated from spring water in Bulgaria), 21 amino acids, milk vitamins, minerals and 10 mg dry extract.
of bilberry (Vaccinium myrtillus), standardized to 25% anthocyanides.

RESULTS AND DISCUSSION

The results from the study are presented in Table 1.

<table>
<thead>
<tr>
<th>% patients with syndromes by days</th>
<th>Dry eye syndrome</th>
<th>Tired eye syndrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>70.73</td>
<td>85.36</td>
</tr>
<tr>
<td>7</td>
<td>17.07</td>
<td>21.95</td>
</tr>
<tr>
<td>14</td>
<td>14.63</td>
<td>19.51</td>
</tr>
<tr>
<td>28</td>
<td>12.20</td>
<td>17.07</td>
</tr>
<tr>
<td>42</td>
<td>14.63</td>
<td>17.07</td>
</tr>
<tr>
<td>56</td>
<td>12.20</td>
<td>14.63</td>
</tr>
</tbody>
</table>

The table shows that the syndromes of dry and tired eye can be put under control very quickly, in the first week after administration of Laktera Vision (fig. 3). During the eighth week of the study the dry eye syndrome was observed in 12.2 % (5) of the cases and the tired eye syndrome – in 14.63% (6) of the cases. The medical history for those who have not taken the probiotic product with bilberry extract regularly shows that when they have not taken the product for 3-4 days the syndromes occur again.

After administration of the product manifestations of the syndromes are put under control for a period of 12 – 24 hours.

Usually the free market offers products which contain in 1 capsule from 5 to 150 mg bilberry extract. In our observation the effect is achieved with 20 mg bilberry extract daily. The smaller necessary daily dose of dry bilberry extract is probably due to a specific amino acid or group of amino acids in the probiotic product, that act as a transport carrier of the molecules of the extract and potentiate the effect of the anthocyanides in bilberry. Identification of the amino acid or the group of amino acids, responsible for that process, is a subject of further study.

CONCLUSION

The probiotic product with bilberry extract controls successfully the syndromes of dry and tired eye, occurring in young people wearing glasses for vision correction, who work on a computer more than 4 hours a day.

REFERENCES

Effect of probiotic product Laktera Vision with Lactobacillus bulgaricus and extract of bilberry on the syndrome of dry eye...


