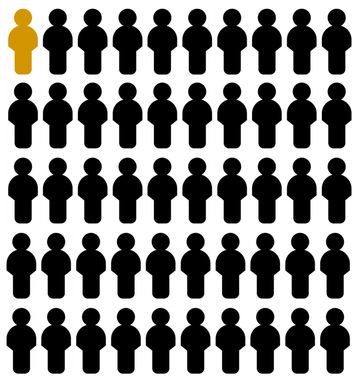
HBV : Are You At Risk?



Hepatitis B Affects 1 In 50 People

Key facts

- **Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic disease.**
- **Hepatitis B is one of the most common infectious diseases globally. It has been estimated that there are 350 million chronic hepatitis B virus (HBV) carriers worldwide. The prevalence of chronic HBV infection varies geographically, from high (>8%), intermediate (2-7%) to low (<2%) prevalence.**

Oligo Fucoidan : Gift from Ocean + Research Effort through Biotech

Oligo Fucoidan

Hi-Q Oligo Fucoidan is a low molecular fucoidan (500-1500Da) derived from oceanic brown seaweed (Laminaria Japonica). Oligo Fucoidan is a food grade health ingredient verified by scientific studies and human clinical trials in multi health benefits.

Hi-Q Marine Biotech has continued scientific studies of Oligo Fucoidan in multiple health benefits since 2008. Scientific studies demonstrates the positive results that it has strong anti-oxidant and bioactivities with bi-directional immunomodulation activities, improve immunity, regulate over-reactive immune response, anti-viral, anti-inflammation, good for bone, kidney, liver and heart health, as well as anti-tumor and anti-aging.

The 25(OH)Vitamin D Status Affected the Effectiveness of Oligo Fucoidan in Patients with Chronic Hepatitis B Virus Infection with Immune Tolerance Phase

Abstract:

Chronic hepatitis B virus (HBV) infection is a serious public health issue. Vitamin D is involved in various pathophysiological mechanisms as an immune modulator and the deficiency rate of vitamin D is prevalent in chronic liver disease. Fucoidan exerts anti-inflammatory, antitumor, antimetastatic, and antiangiogenetic effects; however, its effect on the immune responses of HBV patients is unclear. This study investigated how 25(OH)Vitamin D status affected the effectiveness of oligo fucoidan in patients with HBV infection in the immune tolerance phase. 51 patients received oligo fucoidan 4400 mg/day for 48 weeks. Flow cytometry was used to detect T lymphocyte markers (CD3+CD4+, CD3+CD8+, CD4+CD45RO+, CD8+CD45RO+). The levels of white blood cell (WBC), platelets (PLT), and albumin were decreased after 48 weeks of supplementation ($p < 0.05$). Percentages of CD3+CD8+ and CD8+CD45RO+ cells were decreased after 12 weeks of supplementation ($p < 0.05$). In patients with adequate vitamin D, HBV-DNA concentrations decreased and the proportion of CD4+CD45RO+ and CD8+CD45RO+ cells increased upon oligo fucoidan supplementation. The HBeAg status of one vitamin D-adequate patient changed from positive to negative at the 12th week of supplementation. The oligo fucoidan may regulate immune effects in patients with HBV infection, and the 25(OH)Vitamin D status might have affected the effectiveness of oligo fucoidan.

Keywords: chronic hepatitis B; oligo fucoidan; vitamin D; T lymphocytes

51 patients were included in this study. Subjects received four tablets of oligo fucoidan (550 mg) twice a day for 48 weeks (Hi-Q oligo-fucoidan® was a gift from Hi-Q Marine Biotech International Ltd., Taipei, Taiwan).
All subjects were fully aware of the purpose and nature of the study, which was approved by the Institutional Review Board (IRB) of Kuang-Tien General Hospital

Effect of serum 25(OH)Vitamin D concentration on hepatitis B virus data during oligo fucoidan supplementation.

Variable	0 Week	4th Week	12th Week	24th Week	48th Week	P4Wth Week	P12Wth Week
Vitamin D normal group							
HBV-DNA (log 10 IU/mL)	5	-	4.7	4.3	4.3	-	4
HBsAg (IU/mL)	272.8 ± 18.1	-	394.4 ± 25.0	297.8 ± 65.8	282.1 ± 30.9	-	266.9 ± 36.8
HBeAg postive (n, %)	1/6 (16.7)	-	0/6 (0)	0/6 (0)	0/4 (0)	-	0/2 (0)
Vitamin D indeficiency group							
HBV-DNA (log 10 IU/mL)	3.8 ± 1.8	-	3.8 ± 2.1	3.6 ± 2.0	3.9 ± 1.8	-	3.9 ± 2.0
HBsAg (IU/mL)	2515.3 ± 5240.7	-	3114.7 ± 6938.3	3497.3 ± 8845.9	2281.9 ± 4501.3	-	2453.4 ± 5186.8
HBeAg postive (n, %)	1/20 (5)	-	1/20 (5)	1/20 (5)	1/19 (5.3)	-	1/14 (7)
Vitamin D deficiency group							
HBV-DNA (log 10 IU/mL)	3.0 ± 1.3	-	3.0 ± 1.1	2.8 ± 1.0	3.1 ± 1.0	-	3.1 ± 1.0
HBsAg (IU/mL)	1083.8 ± 1090.1	-	1142.3 ± 1133.4	1231.5± 1446.4	1048.2 ± 1017.8	-	1108.8 ± 1168.3
HBeAg postive (n, %)	2/25 (8)	-	2/25 (8)	2/25 (8)	2/22 (9)	-	2/10 (20)

Effect of serum vitamin D concentration on CD marker data during oligo fucoidan supplementation.

Variable (%)	0 Week	48th Week	P4Wth Week	P12Wth Week
Vitamin D normal group				
$CD3^+CD4^+$	16.5 ± 0.1	10.6 ± 0.4 [a]	9.6 ± 1.3	11.2 ± 1.5
$CD3^+CD8^+$	10.6 ± 13.6	14.3 ± 7.5	6.9 ± 0.1	16.8 ± 1.3
$CD4^+$ $CD45RO^+$	12.3 ± 9.8	4.9 ± 3.5	2.2 ± 0.9 [c]	8.4 ± 4.4
$CD8^+CD45RO^+$	10.9 ± 15.3	5.9 ± 7.1	1.2 ± 0.0	6.8 ± 2.9
Vitamin D indeficiency group				
$CD3^+CD4^+$	8.7 ± 5.5	11.4 ± 5.8	10.6 ± 2.8	13.0 ± 6.0 [ac]
$CD3^+CD8^+$	7.0 ± 5.4	10.9 ± 6.0 [c]	6.9 ± 0.1 [ac]	9.9 ± 5.5 [c]
$CD4^+$ $CD45RO^+$	5.3 ± 7.9	4.7 ± 2.1	5.6 ± 3.9	5.6 ± 5.2
$CD8^+CD45RO^+$	1.6 ± 3.1	2.2 ± 2.7	1.2 ± 1.1	3.4 ± 4.2
Vitamin D deficiency group				
$CD3^+CD4^+$	10.8 ± 7.3	6.6 ± 5.4	8.4 ± 4.4 [d]	9.8 ± 6.8 [d]
$CD3^+CD8^+$	9.2 ± 6.2	6.3 ± 4.0	8.9 ± 6.2 [d]	9.3 ± 8.4 [d]
$CD4^+$ $CD45RO^+$	3.6 ± 3.2	3.4 ± 2.9	4.4 ± 2.8	5.7 ± 6.9
$CD8^+CD45RO^+$	1.3 ± 0.9	1.4 ± 1.1	1.7 ± 1.7	2.9 ± 4.4

Conclusions

The above results indicate that oligo fucoidan might regulate immunity in patients with HBV infection, but the identification of the precise mechanisms underlying its immune regulatory activity requires further investigation. The vitamin D level in patients with HBV is one of the factors that might determine the effects of oligo fucoidan supplementation.

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