Study the effect of "Ich khi an than - HVY" tablets on the hematopoietic function of white rats.

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SUMMARY:

The study aimed to assess the hematopoietic function of white rats when given to oral "Ich khi an than-HVY" tablets on experimental.

Research results show that:

"Ich khi an than-HVY" tablet when used for 4 consecutive weeks at a dose of 0.51g/kg/day (equivalent to the expected therapeutic dose in human) and 1.52g/kg/day (3 times the dose equivalent to the expected therapeutic dose in human) doesn't affect the number of red blood cells, hemoglobin, hematocrit, mean corpuscular volume, the number of white blood cell, leukocyte formula, platelet.

Key words: Insomnia, "Ich khi an than-HVY" tablets.

Acronyms: Modern medicine (YHHD), Traditional medicine (YHCT)

ISSUE:

Insomnia without damage (chronic insomnia) is a condition that is not satisfied with the quantity or quality of sleep or both. Insomnia without damage is more common in mental workers than in manual workers, urban rather than rural. According to the World Health Organization, researchs in 15 different regions of the world estimates that about 26.8% of people who be insomnia are examined and treated in primary health care facilities. A both of modern medicine and traditional medicine have treatments. "Ich khi an than - HVY" is derived as a Vietnamese traditional medicine, be apothecaried into tablets, easy-to-use. In order to evaluate as a scientifically, we conducted a study the effects of "Ich khi an than - HVY" tablets on the hematopoietic function of white rats.

STUDY MATERIALS:

""Ich khi an than - HVY"" tablets with 703mg per tablet, dried medicinal herbs

STT	Medicinal names	Scientific name	Mass	Equivalent to 1 tablet
1	Dinh lang	*Radix polyscias*	163 mg	703 mg
2	Lac tien	*Herba passiflorae foetida*	147 mg	
3	Binh voi	*Tuber stephaniae*	81mg	
4	Ba kich nam	*Radix morindae officinalis*	167mg	
5	Vong nem	*Folium erythrinae*	145mg	

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Ngày phản biện: 5/10/2022
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Medicine meet facility standards.

❖ Usage and dosage: Using 2 times per day, 3 capsules each at 11h and 20h

❖ Treatment course: 21 days.

SUBJECT AND METHOD OF STUDY:

Subjects of study: White Wistar rat, both breeds, healthy, purebred, weight 180 ± 20 g provided by Dan Phuong Laboratory Animal Supply Center - Hanoi. Experimental animals were raised in adequate conditions of food and water at the laboratory of the Department of Pharmacology, Hanoi Medical University for 7 days before the study and during the study period.

Study locations: The Department of Pharmacology, Hanoi Medical University.

Method of study: Study on white rats. White rats, both breeds, were divided into 3 groups, 10 animals each.

- Standard group: Drink distilled water 0.1 ml/100 g/day .

- Treatment group 1: Drink "Ich khi an than - HVY" at a dose of 0.51 g/kg/day (equivalent to the expected therapeutic dose in humans, extrapolation coefficient in rats is 6), 1 ml/100 g/day.

- Treatment group 2: Drink "Ich khi an than - HVY" at a dose of 1.52 g/kg/day (3 times the equivalent of the expected human therapeutic dose), 1 ml/100g/day.

Rats were given water and drugs, tested continuously for 4 weeks, once a day in the morning.

Targets to monitor before and during the study:

- Evaluate the hematopoietic function through red blood cells, average red blood cell volume, hemoglobin, hematocrit, white blood cell count, leukocyte formula and platelet count.

DATA PROCESSING:

The collection data were processed by biomedical statistical methods according to T test-Student and before-after test (Avant-après). The results are presented as $\overline{X} \pm SD$. The difference was statistically significant with $p<0,05$.

STUDY RESULTS

Table 1. The effect of "Ich khi an than-HVY" on Red blood cell count

Time	Red blood cell count (T/L) ($\overline{X} \pm SD$)			p (conpare to standard group)
	Standard (n = 10)	Treatment 1 (n = 10)	Treatment 2 (n = 10)	
Before taking medicine	8,74 ± 0,82	8,15 ± 0,94	8,72 ± 0,52	> 0,05
2 weeks after taking medicine	8,56 ± 1,29	8,76 ± 0,74	9,11 ± 1,89	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	
4 weeks after taking the medicine	8,96 ± 0,55	8,88 ± 0,61	8,58 ± 0,67	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	

Comment: The results in table 1 show that:

After 2 weeks and 4 weeks of taking "Ich khi an than - HVY", testing to evaluate the number of red blood cells in both treatment 1 group (taking "Ich khi an than" at a dose of 0.51g/kg/day) and treatment 2 group (taking "Ich khi an than" at a dose of 1.52g/kg/day) there was no difference, non-statistically significant compared to the standard group, and between before-after taking the reagent (p>0.05).

Table 2. The effect of "Ich khi an than - HVY" on hemoglobin

Time	Hemoglobin (g/dL) ($\overline{X}$ ± SD)			p (compare to standard)
	Standard (n = 10)	Treatment 1 (n = 10)	Treatment 2 (n = 10)	
Before taking medicine	12,32 ± 0,93	11,74 ± 1,49	12,37 ± 0,94	> 0,05
2 weeks after taking medicine	11,82 ± 1,89	12,32 ± 1,18	12,52 ± 2,25	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	
4 weeks after taking the medicine	11,73 ± 0,77	12,20 ± 0,72	11,57 ± 0,83	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	

Comment: The results in table 2 show that:

After 2 weeks and 4 weeks of taking "Ich khi an than - HVY", testing to evaluate the number of hemoglobin in both treatment 1 group (taking "Ich khi an than HVY" at a dose of 0.51g/kg/day) and treatment 2 group (talking "Ich khi an than - HVY" at a dose of 1,52 g/kg/day) there was no difference, non-statistically significant compared to the standard group, and between before-after taking the reagent (p>0.05).

Table 3. The effect of "Ich khi an than - HVY" on hematocrit

Time	Hematocrit (%) ($\overline{X}$ ± SD)			p (compare to standard)
	Standard (n = 10)	Treatment 1 (n = 10)	Treatment 2 (n = 10)	
Before taking medicine	45,42 ± 4,51	42,32 ± 5,55	44,92 ± 2,93	> 0,05
2 weeks after taking medicine	42,96 ± 7,01	44,31 ± 4,30	45,30 ± 8,46	> 0,05
p (before-after test)	> 0,05	> 0,05	> 10,05	
4 weeks after taking the medicine	43,95 ± 2,71	44,90 ± 2,78	42,83 ± 3,19	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	

Comment: The results in table 3 show that:

After 2 weeks and 4 weeks of taking "Ich khi an than - HVY", testing to evaluate hematocrit in both treatment 1 group (taking "Ich khi an than HVY" at a dose of 0.51g/kg/day) and treatment 2 group (talking "Ich khi an than - HVY" at a dose of 1,52 g/kg/day) there was no difference, non-statistically significant compared to the standard group, and between before-after taking the reagent (p>0.05).

Table 4. The effect of "Ich khi an than - HVY" on mean erythrocyte volume

Time	Mean erythrocyte volume (fL) ($\overline{X}$ ± SD)			p (compare to standard)
	Standard (n = 10)	Treatment 1 (n = 10)	Treatment 2 (n = 10)	
Before taking medicine	47,39 ± 14,35	52,00 ± 2,45	51,50 ± 2,64	> 0,05
2 weeks after taking medicine	49,90 ± 1,73	50,70 ± 2,95	50,10 ± 1,79	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	
4 weeks after taking the medicine	49,10 ± 1,29	50,10 ± 2,69	49,80 ± 1,81	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	

Comment: The results in table 4 show that:

After 2 weeks and 4 weeks of taking HVY, the test to evaluate the mean erythrocyte volume in both treatment 1 group (taking "Ich khi an than HVY" at a dose of 0.51g/kg/day) and treatment 2 group (talking "Ich khi an than - HVY" at a dose of 1,52 g/kg/day) there was no difference, non-statistically significant compared to the standard group, and between before-after taking the reagent (p>0.05).

Table 5. The effect of "Ich khi an than - HVY" on white blood cell count

Time	White blood cell count (G/L) ($\overline{X}$ ± SD)			P (compare to standard)
	Standard (n = 10)	*Treatment 1 (n = 10)*	*Treatment 2 (n = 10)*	
Before taking medicine	13,11 ± 2,16	13,25 ± 3,07	13,11 ± 3,50	> 0,05
2 weeks after taking medicine	14,29 ± 2,79	11,92 ± 2,33	11,62 ± 3,37	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	
4 weeks after taking the medicine	13,03 ± 2,00	12,65 ± 1,37	11,14 ± 2,14	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	

Comment: The results in table 5 show that:

After 2 weeks and 4 weeks of taking "Ich khi an than - HVY", testing to assess white blood cell count in both treatment 1 group (taking " Ich khi an than HVY" at a dose of 0.51g/kg/day) and treatment 2 group (talking " "Ich khi an than - HVY"" at a dose of 1,52 g/kg/day) there was no difference, non-statistically significant compared to the standard group, and between before-after taking the reagent (p>0.05).

Table 6. The effect of "Ich khi an than - HVY" on Leukocyte formula

Time	Leukocyte formula ($\overline{X}$± SD)									p (compare to standard)
	Standard (n = 10)			***Treatment 1 (n = 10)***			***Treatment 2 (n = 10)***			
	Lympho (%)	*Trung tính (%)*	*Mono (%)*	*Lympho (%)*	*Trung tính (%)*	*Mono (%)*	*Lympho (%)*	*Trung tính (%)*	*Mono (%)*	
Before taking medicine	82,4 ± 3,8	6,5 ± 1,0	11,1 ± 3,5	80,01 ± 8,38	6,08 ± 3,91	13,91 ± 4,68	79,80 ± 4,89	6,11 ± 1,96	14,09 ± 3,41	> 0,05
After 2 weeks of taking the medicine	76,3 ± 8,5	9,0 ± 3,6	14,8 ± 6,0	80,98 ± 6,01	6,02 ± 3,25	13,00 ± 3,09	80,15 ± 6,99	6,12 ± 2,89	14,07 ± 4,29	> 0,05
P(before-after test)	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	
After 4 weeks of taking the medicine	79,1 ± 3,3	7,0 ± 1,8	13,1 ± 2,7	75,22 ± 4,78	8,96 ± 2,32	15,82 ± 3,37	79,78 ± 5,83	6,28 ± 2,70	13,94 ± 3,39	> 0,05
p (before-after test	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	> 0,05	

Comment: The results in table 6 show that:

After 2 weeks and 4 weeks of taking "Ich khi an than - HVY", testing to evaluate Leukocyte formula count in both treatment 1 group (taking "Ich khi an than HVY" at a dose of 0.51g/kg/day) and treatment 2 group (talking "Ich khi an than - HVY" at a dose of 1,52 g/kg/day) there was no difference, non-statistically significant compared to the standard group, and between before-after taking the reagent (p>0.05).

Table 7. The effect of "Ich khi an than - HVY" on platelet count

Time	Platelet count (G/L) ($\overline{X}$ ± SD)			p (compare to standard)
	Standard (n = 10)	***Treatment 1 (n = 10)***	***Treatment 2 (n = 10)***	
Before taking medicine	548,90 ± 86,21	567,10 ± 68,43	552,00 ± 96,40	> 0,05
2 weeks after taking medicine	481,70 ± 97,12	563,80 ± 81,79	600,70 ± 151,94	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	
4 weeks after taking the medicine	564,50 ± 25,01	632,67 ± 132,79	583,78 ± 118,78	> 0,05
p (before-after test)	> 0,05	> 0,05	> 0,05	

Comment: The results in table 7 show that:

After 2 weeks and 4 weeks of taking "Ich khi an than - HVY", testing to assess platelet count in both treatment 1 group (taking "Ich khi an than HVY" at a dose of 0.51g/kg/day) and treatment 2 group (talking "Ich khi an than - HVY" at a dose of 1,52 g/kg/day) there was no difference, non-statistically significant compared to the standard group, and between before-after taking the reagent (p>0.05).

CONCLUSION:

"Ich khi an than - HVY" tablets when taken orally for 4 consecutive weeks with 2 doses of 0.51g/kg/day (equivalent to the expected therapeutic dose in humans) and 1.52g/kg/day (3 times the expected equivalent therapeutic dose in humans) no effect on red blood cell count, hemoglobin content, hematocrit, mean red blood cell volume, white blood cell count, leukocyte formula, platelet count.

REFERENCES:

1. Gerhard Vogel H. (2016), *Drug discovery and evaluation Pharmacological assays*, Springer.

2. World Health Organization (2013), *Working group on the safety and efficacy of herbal medicine*, Report of regional office for the western pacific of the World Health Organization.