

Effect of Liv.52 on Growing Rats under the Influence of Corticosteroids

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Previous reports have shown that Liv.52 an indigenous drug (The Himalaya Drug Co.), causes increased growth in young animals^{1,2,3}. The mechanism of this weight gain is still unexplored. The purpose of the present study was to see whether it can antagonise the corticocatabolic activity as known anabolic steroids do⁴. This was done by measuring the growth rate after Liv.52 in the presence of corticosteroid and comparing it with known anabolic agents.

MATERIALS AND METHODS

Twenty eight young, freshly-weaned rats were taken and divided into 4 groups – 7 rats in each group. The groups were as follows:

1. Control, given prednisolone, 3 mg/kg orally daily.
2. Prednisolone as above + Ethylestrenol (Orabolin) 2 mg/kg orally daily.
3. Prednisolone as above + Nandrolone phenylpropionate (Nandrabolin) 10 mg/kg I.M. weekly.
4. Prednisolone as above + Liv.52, 0.5 ml/100 g orally daily.

The animals were kept separately in individual cages and were fed *ad libitum*.

The weight of each animal was recorded twice in a week and the experiment was continued for 4 weeks.

RESULTS

Group I: Prednisolone given daily			
Rat No.	Initial wt. (gms)	Wt. at the end of 2 weeks (gms)	Wt. at the end of 4 weeks (gms)
1	44	74	80
2	33	50	62
3	30	74	87
4	51	75	94
5	34	68	96
6	34	72	80
7	39	56	60
	265/7	469/7	559/7
Mean ± SE	38.0 ± 2.8	67.0 ± 3.7	79.8 ± 5.4
Total gain in mean weight in 4 weeks, 42.3 gms.			

Group II: Prednisolone + Orabolin			
Rat No.	Initial wt. (gms)	Wt. at the end of 2 weeks (gms)	Wt. at the end of 4 weeks (gms)
1	57	103	112
2	37	73	102
3	38	94	105
4	41	74	91
5	41	77	96
6	43	54	102
7	33	73	102
	290/7	548/7	710/7
Mean ± SE	41.4 ± 2.9	78.0 ± 6.0	101.4 ± 2.5
Total gain mean weight 60 gms.			

Group III: Prednisolone + Nandrabolin			
Rat No.	Initial wt. (gms)	Wt. at the end of 2 weeks (gms)	Wt. at the end of 4 weeks (gms)
1	40	85	110
2	36	57	94
3	37	56	101
4	39	56	100
5	49	73	100
6	35	56	96
7	28	57	87
	264/7	440/7	688/7
Mean ± SE	37.7 ± 2.4	62.0 ± 4.3	98.2 ± 2.8
Total gain in mean weight 60.6 gms.			

Group IV: Prednisolone + Liv.52			
Rat No.	Initial wt. (gms)	Wt. at the end of 2 weeks (gms)	Wt. at the end of 4 weeks (gms)
1	34	86	109
2	42	68	100
3	47	86	110
4	34	76	93
5	51	85	91
6	56	95	100
7	47	83	99
	311/7	579/7	702/7
Mean ± SE	44.0 ± 3.1	82.7 ± 6.7	100.3 ± 2.7
Total gains mean weight in 4 weeks, 56.3 gms.			

ANALYSIS OF RESULTS

In analysing the results Student's 't' test was used to test the significance of observed differences and the level of significance was placed at 0.05 from the Tables of probability for 't' values.

1. Initial weights of the 4 groups were not statistically different from each other.
2. Final weights of groups II, III and IV were not statistically different from each other.
3. Final weights of groups II, III and IV were significantly higher than group I.

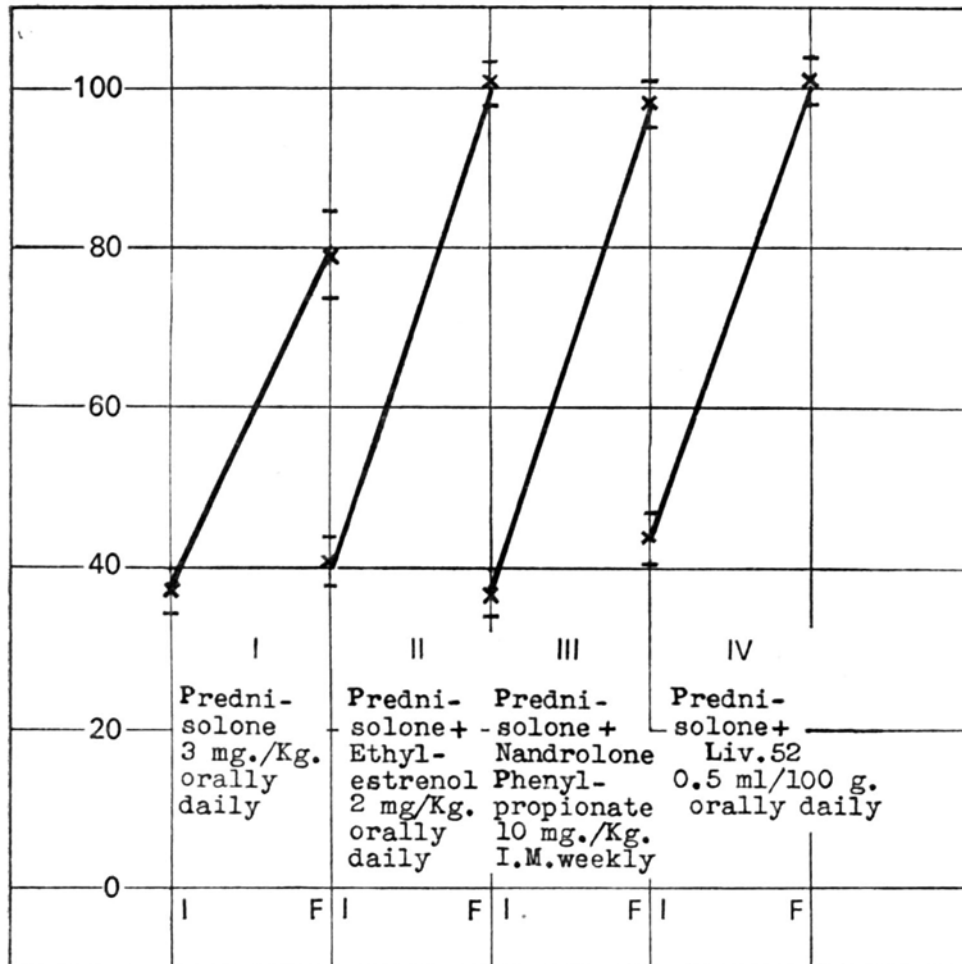
DISCUSSION

Our results show that Liv.52, like anabolic steroids can promote growth even in the presence of corticosteroids. The weight gain after Liv.52 is not significantly different from that after anabolic steroids. Anabolic steroids, although they have their main action on nitrogen retention, are not completely free of androgenic effects⁵. Hence, a compound like Liv.52, being unrelated to androgens would be valuable as an anabolic agent.

However, nitrogen retention studies would be essential to demonstrate the anabolic activity of Liv.52. This work was undertaken in our Department and has just been completed. The results of this study show that in experimental animals nitrogen retention has been observed and demonstrated by the use of Liv.52.

Significance of group differences				
	I	II	III	IV
Initial	38.0 ± 2.8	41.4 ± 2.9	37.6 ± 2.4	44.0 ± 3.1
Final	79.8 ± 5.4	101.0 ± 2.5	98.0 ± 2.8	100.3 ± 2.7

[Liv.52 contains *Capparis spinosa* (Kabra), *Cichorium intybus* (Kasni), *Solanum nigrum* (Makoi), *Cassia occidentalis* (Kasondi), *Terminalia arjuna* (Arjun), *Achillea millefolium* (Gandana), *Tamarix gallica* (Jhau) and Mandur bhasma]



Graph showing mean initial and final weights in each group. There is a significant difference between group 1 and groups 2, 3, and 4, but no significant difference between groups 2, 3 and 4.

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