

نشاط انزيمات ترانس امينير في سيرم الجاموس المصرى المصاب بمرض السل

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الملخص العربى

تم فى هذا البحث نشاط انزيم الجلوتاميك اوكسالواستيك ترانس امينير وكذلك انزيم الجلوتاميك بيروفك ترانس امينير فى (٢٠) جاموسة ايجابية لاختبار التبركلين وكذلك (١٠) جاموسة سالبة لنفس الاختبار . وقد وجد نتيجة هذا البحث ان هناك ارتفاع معنى فى مستوى انزيم الجلوتاميك اوكسالواستيك ترانس امينير فى الحيوانات المصابة بالسل عن الحيوانات الغير مصابة بهذا المرض . وكذلك وجد انه ليس هناك أى تغيير يذكر فى مستوى انزيم الجلوتاميك بيروفك ترانس امينير فى الحيوانات المصابة والغير مصابة وهذه الملحوظة تعتبر ذات قيمة فى تشخيص مرض السل الى جانب اختبار التيركلين .

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TRANSAMINASE ACTIVITY IN SERA OF EGYPTIAN TUBERCULOUS BUFFALOES

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SUMMARY

Serum samples from 20 tuberculin positive and 10 tuberculin negative buffaloes were subjected to determination of GO-T and GP-T activity. It was found that there was a significant increase in the level of GO-T in the sera of tuberculous buffaloes than healthy ones. On the other hand there was no significant changes in GP-T level in the sera of tuberculous than healthy buffaloes. This observation may be of value as a diagnostic procedure beside the tuberculin test.

INTRODUCTION

The changes in the serum concentration of GO-T and GP-T as determined by their biochemical activity occur essentially as a result of some processes involving the body tissues (WROBLEWSKI and LA DUE, ; 1955 MOLANDER *et al.*, 1955 ; WROBLEWSKI and LA DUE. 1956 ; KING and WOOTON, 1959 ; FORD and LAWRENCE, 1965 KAMALYAN *et al.*, 1969 and HOFMANN and EL-AMROUSI, 1974).

Consequently the presence of higher concentration of such enzymes may be used diagnostically in order to assess the level of destruction of the body organs. Therefore the aim of this work is to estimate the effect of tuberculosis upon the activity of serum GO-T and GP-T in Egyptian buffaloes.

MATERIALS AND METHODS

Blood samples were collected from 10 tuberculin negative buffaloes and 20 tuberculous ones at Giza. These animals were apparently healthy and proved to be free from internal and external parasite as well as blood parasites. The collected samples were used for obtaining clear serum which subjected to determination of the enzymatic activity of both GO-T and GP-T by using the method of REITMAN and FRANKEL, (1957).

All the tuberculin positive cases showed tuberculous lesions on post mortum examination except one case which showed traumatic reticulo-peritonitis only.

The obtained results were analysed statistically as stated by SNEDECOR (1956).

RESULTS AND DISCUSSION

Data concerning serum GO-T and GP-T activity in tuberculin negative and tuberculous buffaloes are presented in Table 1 and graphically illustrated in Fig. 1.

With reference to the normal average level of serum GO-T and GP-T the present data were contradicted those obtained by AWAD (1966) who recorded a considerably lower levels of both SGO-T and SGP-T in healthy female buffaloes. The respective values were 27.45 ± 5.78 and 4.28 ± 0.67 F.U. per ml. of serum.

On the other hand, approximately similar results were recorded by MALHERBE (1960) and SINDELAROVA *et al.* (1965) in bovine sera.

From the present study, it was noted that there is a significant increase in SGO-T level ($P < 0.001$) in tuberculous buffaloes rather than tuberculin negative ones. Meanwhile, no marked changes in the level of GP-T in the sera of tuberculin positive than tuberculin negative buffaloes. (Fig. 1).

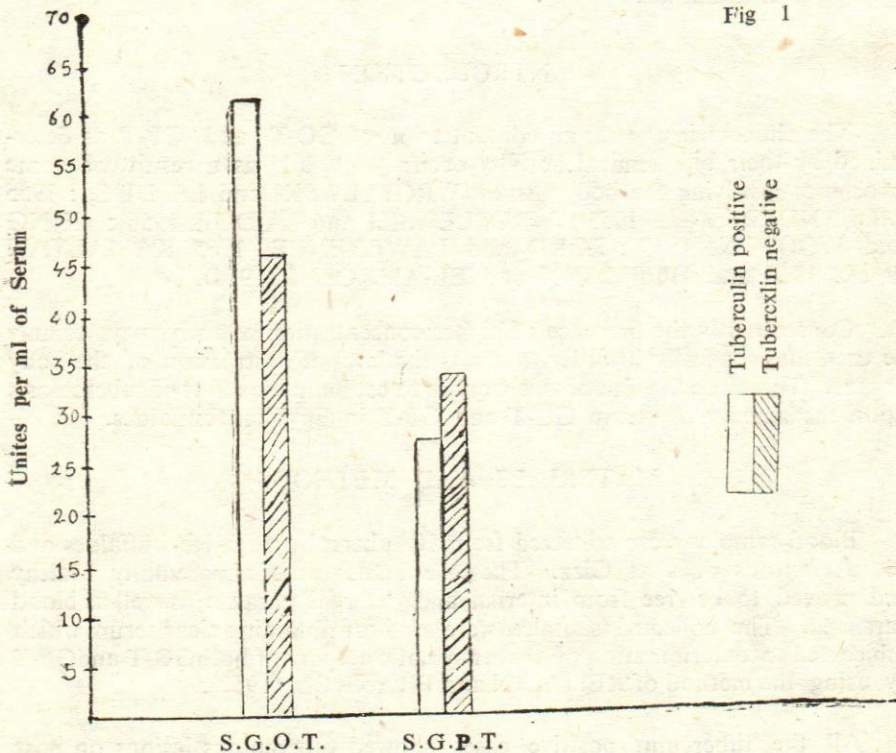


Fig. 1

The significant increase in serum GO-T in tuberculous buffaloes may possibly be interpreted as the great tendency of the lungs and lymph nodes—the main tissues being invaded by the tubercle bacilli - to the affection than other tissues. In this respect CORNELIUS *et al* (1959) had found a considerable level of GO-T in bovine lungs and lymph nodes, whilst GP-T level was nil in these tissues.

The tuberculin-non specific-positive buffaloes suffering from traumatic reticulo-peritonitis may included in this group on the basis that tubercle bacilli could be isolated from lymph nodes of tuberculin negative buffaloes showing no apparent lesions (ZEIDAN, 1972). Another explanation may be also offered that the presence of other acid fast bacilli in the animal body rendering it sensitive to tuberculin reaction.

The obtained results are supported by the findings of GOULD, and GRIMES (1959) and HUHNS (1961) where the level of serum GO-T increased in John's disease cases.

Additionally, GOULD and GRIMES (1959) had found an elevation of serum GO-T level which may reach up to 280 F.U. per ml. of serum in cases of inflammation of lungs. GRUNDER (1961) recorded 15.8 per cent of pneumonia cases with a significant rise in the serum GO-T activity.

Hence, the determination of serum GO-T could be considered as beneficial diagnostic procedure for assessing the degree of tissue damage in either lymph nodes or lung tissues which contain only GO-T (CORNELIUS, *et al.*; 1959) in case of tuberculosis beside the tuberculin test.

TABLE 1. Statistical analysis of the obtained results

Enzymes	Tuberculin	Minimum value	Maximum value	Mean	S.E.
SGO-T	Positive	25.4	97.8	*62.005	± 3.566
	Negative	33.5	54.4	*46.51	± 1.954
SGP-T	Positive	6.4	46.2	27.08	± 2.183
	Negative	25.4	45.2	33.28	± 1.910

* Significant under $P < 0.001$.

S. E. : Standard error.

SGO-T : Serum glutamic-oxaloacetic transaminase in Francle Units per ml. of serum.

SGP-T : Serum glutamic-pyrovic transaminase in Francle Units perml. of serum.

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