TOPICAL PENTOSTAM IN AN ATTEMPT TO PRODUCE MORE RAPID HEALING OF SKIN ULCERS DUE TO *LEISHMANIA BRAZILIENSIS BRAZILIENSIS*

We have already described the course of skin ulcers due to this parasite after intralesional Glucantime[1]. Because there appeared to be a slight response over 30 days we have extended our observations to the use of two topical preparations of Pentostam. These are the solution of Pentostam (Wellcome) inoculated intralesionally and Pentostam powder mixed with Aquaphor in the form of a cream. Once again we have compared the result of local treatment of one ulcer with an untreated lesion in the same patient with multiple ulcers. One third of our patient with initial cutaneous disease have such lesions in the area where we work[3]. The maximum (R_1) and minimum (R_2) radius of the ulcer was measured and the area calculated using the formula: $R_1 \times R_2 \times TT$.

Table 1 shows the results of intralesional Pentostam 300mg Sb^v daily for 10 days at the end of treatment in one patient and after 30 days later in two others. In terms of ulcer size no beneficial effect was apparent during this time span although ulcers were often thought to be shallower. Unlike Glucantime Pentostam was not painful on local injection.

Pentostam powder (15 grams) was mixed with 20 millilitres of water and 15 grams of Aquaphor to form a cream. This was applied in doses of 2 grams (600mg Sb^v) daily to the surface of the ulcer for 5 or 10 days. Pupo[6] reported favourable results using a 1% tartar emetic cream applied daily although he did not give data.

Table 2 details treatment duration and results after varying periods of observations. Once again no beneficial effect could be documented using the size of ulceration as a measurement and comparison with a control lesion. Three other patients (results not presented) were treated with Pentostam cream for single ulcers without visible effect. One of these patients developed erythema and pain on the sixth day of application which resolved on stopping the application.

Since the results do not suggest any patient benefit we have suspended further investigations. Schmidt[8] in 1950 was able to review an extensive

Table 1 – *Area in centimetres of treated and control lesions before and after local treatment with Pentostam.*

Patient code LTCP	*Age/Sex*	*Measurements of ulcer in centimetres*				*Duration of observation in days*
		Control Lesions		*Intralesional Pentostam*		
		Before	*After*	*Before*	*After*	
345	14/F	1.3	2.8	1.6	6.1	30
339	16/M	1.2	1.4	3.1	7.0	30
360	32/F	1.6	2.0	1.4	2.1	10

Table 2 – Results of applications of Pentostam cream over varying time periods

Patient code	*No. of days of treatment*	*No. of days assessed after treatment*	*Measurement of ulcer in centimetres*			
			Control Lesions		*Treated Lesions*	
			Before	*After*	*Before*	*After*
760	5	1	3.1	3.1	12.6	1.1
769	5	1	2.0	2.0	2.9	2.9
769	5	15	2.0	2.0	2.9	2.9
826	5	1	11.8	11.8	0.8	0.8
826	5	15	11.8	11.8	0.8	0.7
360	10	1	1.6	2.0	0.8	0.3
345	10	20	1.3	2.8	1.3	0.5
339	10	20	1.2	1.9	0.8	1.2

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literature on local injection therapy with solustibosan. Solano *et al*[9] have recently reported favourable on the effect of intralesional Glucantime. A short observation period only was possible in our patients with *Leishmania braziliensis braziliensis* (Lbb) because they require systemic pentavalent antimonial therapy. The favourable results of previous workers might be simply due to spontaneous healing which we know to occur even with Lbb[4]. The best work available on this method is in animal models, that of Richens[7]. Comparing the effects of subcutaneous and intralesional routes of Pentostam on *Leishmania major* infections in Balb C mice he showed no benefit from intralesional application even using very high doses (400mg Sb^v per Kg.). Also the individual response was less predictable when local treatment was used.

There is a rational for trying local pentavalent antimony therapy since the amount of drug from a systemic dose concentrated in the site of a skin lesion may be very low[5]. There is some unpublished evidence that Pentostam cream may have effect applied to *Leishmania braziliensis panamensis* lesions in *Mystromys albicaudatus.* (McGreevy P.B.: personal communication). Other workers in a *Leishmania tropica* mouse model did not think topical antimony therapy showed effect[2]. Further observations are indicated to clarify these conflicting results.

REFERENCES

1. Aristimuño Barrios L, Costa JML, Netto EM, Vexenat COR, Cuba CC, Marsden PD. Intralesional glucantime in *Leishmania braziliensis braziliensis* infections. Transactions of the Royal Society of Tropical Medicine and Hygiene, in press.
2. El-on J, Jacobs GP, Witztum E, Greenblatt CL. Development of topical treatment for cutaneous leishmaniasis caused by *Leishmania major* in experimental animals. Antimicrobial Agents and Chemotherapy 26: 745-751, 1984.
3. Llanos-Cuentas EA, Marsden PD, Lago EL, Barreto AC, Cuba Cuba C, Johnson WD. Human mucocutaneous leishmaniasis in Três Braços, Bahia-Brazil. An area of *Leishmania braziliensis braziliensis* transmission. II. Cutaneous disease. Presentation and evolution. Revista da Sociedade Brasileira de Medicina Tropical 17: 169-177, 1984.
4. Marsden PD, Tabda MS, Barreto AC, Cuba CC. Spontaneous healing of *Leishmania braziliensis braziliensis* skin ulcers. Transactions of the Royal Society of Tropical Medicine and Hygiene 78: 561-562, 1984.
5. Marsden PD. Pentavalent antimonials: old drugs for new diseases. Revista da Sociedade Brasileira de Medicina Tropical 18: 187-198, 1985.
6. Pupo JA. Leishmaniose tegumentar. Epidemiologia, profilaxia e tratamento da leishmaniose. Americana Sciencia Medica 4: 387-409, 1926.
7. Richens JA. The effects of sodium stibogluconate on *Leishmania major* infections in Balb C mice: subcutaneous and intralesional routes of administration compared. Mimeographed document. London 34 pp., 1983.
8. Schmidt H. An advance in the therapeutics of pentavalent antimony: solustibosan (sodium antimony gluconate). The Journal of Tropical Medicine 53: 95-102, 1950.
9. Solano AE, Hidalgo HH, Zeledon RA. Tratamiento intralesional exitoso de la leishmaniasis por *Leishmania braziliensis panamensis* con glucantime. Medicina Cutis ILA 12: 19-24, 1984.

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