



AERO-ALLERGY IN SOUTH AFRICAN OLYMPIC ATHLETES

To the Editor: The Olympic and Paralympic games were held in Sydney, Australia in September/October 2000, this being the first time since the beginning of the previous century that the games have been held in mid-spring.

The aim of this study was to determine the incidence of atopy and to identify the South African Olympic athletes at risk of developing allergic symptoms that could have an adverse effect on their performance during the Olympic games. We planned to offer therapeutic advice and medication to those athletes found to be at risk, and also to monitor symptoms and medication during the Olympic games in Sydney by means of a self-administered diary card.

Eighty-one athletes (63%) from the South African Olympic squad, representing nine sporting disciplines, underwent: (i) detailed questioning based on an allergy questionnaire; (ii) a physical examination for the presence of atopy; and (iii) skin-prick testing (SPT) for a panel of 14 aero-allergens. The panel included grass allergens from the indigenous *Panicoidae* and *Chloridoideae* groups, found in both Australia and South Africa.

Allergy screening of the athletes took place at the Sports Science Institute in Cape Town in March 2000 and in Durban in July 2000.

Financial assistance to conduct the study was provided by Aventis, with the latter also supplying Telfast and Nasacor to the allergic athletes. Glaxo provided Flixonase as an alternative to Nasacor.

RESULTS

Atopy was identified in 62% of the athletes tested. This was far above what is currently believed to be the prevalence of atopy in the general South African population (approximately 30%). The distribution of seasonal and perennial rhinitis in the cohort is shown in Table I and the skin prick test results are given in Table II. Eleven per cent of those tested were found to be asthmatic.

The majority of athletes had no knowledge as to what their allergies were or what could be done to treat them. The athletes who tested positive on SPT were all given advice with regard

Table II. Distribution of skin prick-positive responses to individual aero-allergens (N = 81)

	%
Bermuda grass	60
<i>Dermatophagoides pteronyssinus</i> (house dust mite)	54
<i>Eragrostis</i> (Boer Love grass)	52
<i>Zea mays</i> (maize pollen)	48
Kikuyu grass	44
Buffalo grass	38
Grass mix (five <i>pooideae</i> grasses)	38
Plane tree pollen	22
<i>Aspergillus fumigatus</i>	16
<i>Alternaria alternata</i>	16
<i>Cladosporium herbarum</i>	14
Acacia pollen	8
Oak tree pollen	6
Eucalyptus pollen	4

to their allergies as well as Telfast and Flixonase/Nasacor nasal spray to commence before the Olympic games in Sydney to prevent an exacerbation of rhinitic symptoms. Asthmatic subjects were referred to a physician for optimal control of the asthma before the Olympics. There were no incidences of exacerbation of either perennial or seasonal allergic rhinitis requiring any additional treatment from the medical team while our athletes were in Sydney. Although all athletes were given symptom diaries to record during their stay in Sydney, we were unable to analyse these data since very few athletes returned their diary cards.

It was not possible to screen the South African Paralympic team.

DISCUSSION

Incidence of allergies is increasing worldwide. As yet there are no recent data on the prevalence of atopy in the South African population although it is generally believed to be in the region of 30%. The recent Isaac study of children found a 17% prevalence of rhinitis among 11 – 14-year-old children in the Cape (Dr R Ehrlich, University of Cape Town – personal communication).

This study was conducted with the view to identifying the individuals at risk and preparing our athletes for the exposure to high pollen counts expected in the Sydney area during the spring.

A recent study by Katelaris *et al.*¹ found that 56% of Australian Olympic athletes had a history of allergic rhinitis and that 59% had positive SPTs.

A comparison of data obtained in this study and the Australian data is shown in Table III. The results show a remarkable similarity between the distribution of allergies among the South African and Australian athletes.

Table I. Distribution of atopy and allergic rhinitis in the 81 athletes tested

	Athletes (%)
Atopic	62
Seasonal allergic rhinitis (SAR)	33
Perennial allergic rhinitis (PAR)	18
PAR and SAR	37

**Table III. Comparison of South African and Australian positive SPT data**

	South Africa	Australia
Athletes (N)	81	214
Positive skin prick test (%)	62	59
Seasonal allergic rhinitis (%)	38	42
Swimmers (%)	54	54
Hockey players (%)	63	27
Swimmers		
Indoor (%)	54	38
Outdoor (%)	36	44
Hockey players		
Indoor	31	27
Outdoor (%)	56	13

Our study emphasises the high prevalence of allergies, in particular allergic rhinitis, among elite young athletes. Allergic rhinitis is an important cause of under-achievement, fatigue, poor sleep and associated medical morbidity such as infective sinusitis. The poor quality of life resulting from undiagnosed and under-treated allergic rhinitis is detrimental to physical performance, particularly at the level required by elite athletes. We would recommend that in view of its high prevalence an allergic evaluation be an essential part of the medical workup of elite athletes. Our study also shows that medical intervention is effective in preventing symptoms in individuals known to be at risk for seasonal exacerbation when exposed to high pollen counts in spring.

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1. Katelaris CH, Carozzi FM, Burke TV, Blyth K. A springtime Olympics demands special consideration for Olympic athletes. *J Allergy Clin Immunol* 2000; 106: 260-266.

COMPARATIVE SAFETY AND EFFICACY OF BIOPLASMA FDP VERSUS SINGLE-DONOR FRESH-DRIED PLASMA IN CARDIOPULMONARY BYPASS PATIENTS

To the Editor: Plasma carries the same level of safety as single-donor blood and blood component transfusion.¹ Various measures have been introduced to reduce this risk, such as the use of non-remunerated voluntary blood donors, the exclusion of potentially high-risk donors, the use of laboratory screening methods and transfusion audits. Bioplasma FDP (S4 fresh human plasma, lyophilised powder for intravenous (IV) infusion 28/30.3/405, Natal Bioproducts Institute, KwaZulu-Natal) is a solvent detergent (SD)-treated 'universal' fresh-dried plasma (FDP) product (50 ml and 200 ml), in which lipid-enveloped viruses (HIV, HCV and HBV) are inactivated using Triton X-100 and tri-n-butyl phosphate (TnBP). SD-treated plasma carries a theoretical risk of adverse events, as a result of either the presence of residual SD agents,^{2,3} or the fact that it is made from a pool of all ABO blood group donors' fresh-frozen plasma (FFP). There is also a possibility that the SD process may cause qualitative and quantitative alteration of coagulation factors and other plasma proteins.⁴

The objectives of this study were to compare Bioplasma FDP with non-SD-treated single-donor FDP (sFDP), in respect of (i) its clinical and laboratory efficacy in correcting haemostatic abnormalities; and (ii) adverse events. A single-blinded consecutive enrolment study was conducted of 66 adult patients (43 with valid results) undergoing cardiopulmonary bypass (CPB) surgery at the cardiac surgery unit, Wentworth Hospital, KwaZulu-Natal. Clinical (pulse, blood pressure, temperature, skin changes) and laboratory parameters (activated partial thromboplastin time (aPTT), fibrinogen, and assays for factors V, VII, VIII, IX, and X) were measured immediately before, and at 30 minutes, 60 minutes, 4 hours and 24 hours after, the infusion of one or two units of Bioplasma FDP or sFDP. Standard descriptive statistics and two-tailed non-parametric tests were conducted.

Twenty-three patients (23/43, 53%) received Bioplasma FDP, while 20 (20/43, 47%) received sFDP. There were two main indications for plasma administration, namely volume replacement and excessive bleeding. There was no significant difference in the levels of coagulation factors V, VII, VIII, IX and X at any of the sampling times, as typified by the comparison at 30 minutes (Table I). Pulse and mean systolic blood pressure measurements did not reveal any statistically significant differences. No adverse events were reported in any of the 43 patients.

These results confirm the immediate efficacy and safety of SD-treated plasma, which has also been shown in other published studies.⁵⁻¹⁰ Conclusive evidence of the efficacy of plasma in correcting haemostatic abnormalities would require large infusions, followed by testing for clotting factor recovery.



Table I. Mean (range) levels of coagulation factors V, VII, VIII, IX and X (IU/ml) 30 minutes after the administration of either one or two units of Bioplasma FDP (Bio) or sFDP (Fdp)

Factors (IU/ml)	1 unit		2 units	
	Bio	Fdp	Bio	Fdp
V	0.2 (0.04 - 0.33)	0.3 (0.8 - 0.6)	0.3 (0.06 - 0.83)	0.4 (0.06 - 0.93)
VII	0.8 (0.4 - 1.3)	1.4 (0.2 - 4.1)	0.8 (0.3 - 3.37)	0.9 (0.47 - 2.71)
VIII	0.9 (0.4 - 1.7)	2.4 (0.8 - 3.6)	1.6 (0.48 - 3.03)	1.6 (1.29 - 2.49)
IX	0.5 (0.2 - 0.7)	0.6 (0.2 - 1.1)	0.9 (0.36 - 1.75)	0.7 (0.31 - 1.19)
X	0.7 (0.4 - 1.2)	0.8 (0.2 - 1.6)	0.6 (0.37 - 0.86)	0.9 (0.41 - 4.01)

Our study shows that Bioplasma FDP is at least as good as sFDP in this regard.

In South Africa the need to investigate ways of reducing risk when administering blood and blood products is apparent. The issuing of 'quarantine' FFP (donor-retested plasma) or Bioplasma FDP, and appropriate product use, provide some approaches to managing this risk.

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ISOLATED PANCREATIC TUBERCULOSIS AND OBSTRUCTIVE JAUNDICE

To the Editor: Even in countries where pulmonary tuberculosis (TB) is regularly encountered, abdominal TB is an uncommon site of extrapulmonary TB. The development of abdominal TB may be independent of pulmonary disease, with the reported incidence of co-existing disease ranging between 5% and 38%.¹ Any component of the digestive system may be affected by TB; however, pancreatic involvement is extremely uncommon and is generally associated with miliary TB.² Auerbach, in reviewing 1 656 autopsies undertaken on TB patients, found no case of isolated TB of the pancreas.³ Bhansali, in reporting on a series of 300 cases of abdominal TB, also reported no case of pancreatic TB.⁴

Given the protean manifestations of abdominal TB in general and pancreatic TB specifically, it is not surprising that isolated pancreatic TB is often diagnosed belatedly. We report a case of isolated pancreatic TB presenting with obstructive jaundice.

Case report

A 43-year-old female patient presented with pruritus and deep jaundice of 3 months' duration; this was associated with recent loss of appetite and weight. Her previous medical history was non-contributory; specifically there was no prior history of TB. Physical examination revealed deep jaundice. The cardiopulmonary and abdominal examination was normal.

The haemoglobin concentration was 14.5 g/dl, the white blood cell count $5.2 \times 10^9/l$ and the platelet count $320 \times 10^9/l$. The renal function and electrolyte profile were normal. The liver function test revealed bilirubin 139 $\mu\text{mol/l}$ (normal up to 17 $\mu\text{mol/l}$), alkaline phosphatase 450 U/l (normal up to 150 U/l), protein 71 g/l and albumin 34 g/l.

The chest radiograph was normal. Abdominal ultrasonography revealed a hypo-echoic mass in the pancreatic head and the intra- and extrahepatic bile ducts were dilated. Abdominal computed tomography (CT) demonstrated a hypodense lesion involving the pancreatic head; the lesion did not appear to encase the superior mesenteric vessels (Fig. 1). Endoscopic retrograde cholangiopancreatography (ERCP) revealed a distal common bile duct stricture.

At laparotomy a firm mass was encountered along the head of the pancreas and a few lymph nodes were noted along the peripancreatic area. The rest of the findings were normal. The pancreatic lesion was considered resectable and a pylorus-preserving pancreaticoduodenectomy was performed.

The postoperative course was uneventful. Tuberculostatic treatment was commenced and 2 months after surgery the patient was well and gaining weight.

The resected specimen consisted of the head of the pancreas, duodenum and six lymph nodes. The pancreas showed hyperaemic and necrotic areas, with no discrete tumour mass.



Fig. 1. Abdominal CT scan demonstrating a heterogeneous mass in the pancreatic head.

The common bile duct was probe-patent. The duodenal mucosa opposite the pancreas was hyperaemic and oedematous. The lymph nodes were also necrotic. Histological examination of the pancreas showed extensive granulomatous inflammation associated with central caseous necrosis. Numerous epithelioid cells, Langhans' giant cells and small lymphocytes surrounded the areas of necrosis. A Ziehl-Neelsen stain was positive for acid-fast bacilli. The granulomas could be seen within the pancreatic acini as well as around the common bile duct (Fig. 2).

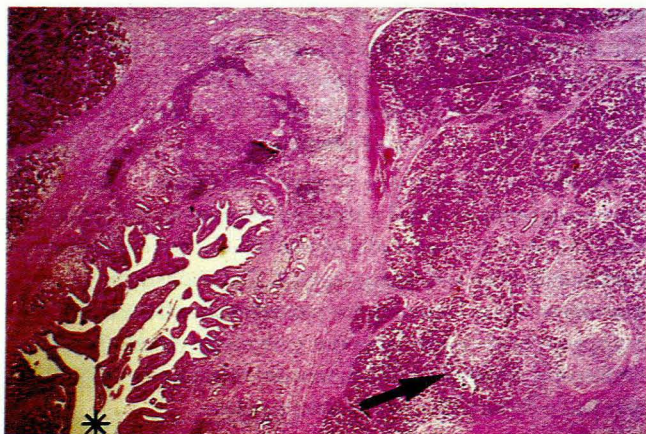


Fig. 2. Low-power magnification ($\times 20$) showing granulomas with caseous necrosis (arrowed) in the pancreatic acini and around the bile duct (asterisk).

58 Discussion

Isolated pancreatic TB is an exceedingly rare cause of pancreatic disease. With the evolutionary changes in the biology of the mycobacterium and the increasing numbers of immunocompromised patients, atypical gastro-intestinal involvement is being increasingly reported; such patients

usually present with pancreatic abscess or pancreatic adenitis. Isolated pancreatic TB, in contrast, typically occurs in otherwise healthy patients.^{5,6}

In addition to constitutional symptoms (anorexia, weight loss, low-grade fever, night sweats), patients with pancreatic TB may present with signs of acute or chronic pancreatitis, pancreatic carcinoma, obstructive jaundice or pancreatic abscess.⁷⁻¹⁰ Our patient, who was not immunocompromised, satisfies the criteria for the diagnosis of primary pancreatic TB.¹¹ As such she had no history of TB, disease localised to the pancreas, a clear chest radiograph, no detectable focus of TB and demonstration of mycobacteria in the resected specimen. Given the rarity of primary pancreatic TB it is not surprising that literature on this subject is largely in the form of case reports. To date there have been 5 reports in the English literature describing primary pancreatic TB presenting with obstructive jaundice.^{7,9,12,13,14} The pathogenesis of isolated pancreatic TB is poorly understood. The most plausible mechanism is a lymphohaematogenous spread from an undetected source.¹⁵ The proximity of the intestine makes it a likely source with spread to the pancreas via the involved retroperitoneal lymph nodes. Less acceptable is the suggestion that the pancreas is involved by a toxic allergic reaction to TB elsewhere in the body.¹⁶

The pre-operative diagnosis of isolated TB is difficult. Ultrasonography, CT scan and ERCP findings are largely inconclusive, revealing nonspecific features that may be seen in any inflammatory process or in a carcinoma. In all 5 patients presenting with obstructive jaundice the operative findings were consistent with pancreatic carcinoma; in 2 patients this was considered irresectable and palliative bypass procedures were undertaken. Histological confirmation of TB in these patients was by means of direct tru-cut needle biopsy and lymph node biopsy respectively.^{12,13} In 3 patients, as with our patient, the mass in the head of the pancreas was considered resectable; in these patients pancreaticoduodenectomy was successfully undertaken.^{7,9,14} The dilemma of undertaking a major resection for an ostensibly benign condition is balanced by the improvement in outcome following pancreaticoduodenectomy in current surgical practice.¹⁷ A resectional procedure fully addresses the concern of an underlying malignancy and provides adequate material to confirm the diagnosis of TB which may prove elusive when fine-needle aspiration and direct needle tru-cut biopsies are undertaken.

It has been suggested that if a diagnosis of pancreatic TB is made pre- or intra-operatively standard tuberculostatic treatment may be successful.^{18,19} Controversially, it has been suggested that complete surgical excision, without tuberculostatic treatment, may constitute adequate therapy.⁹ In environments where TB is common, such as ours, this approach is ill-advised.

With its increasing incidence, clinicians working in high-risk



areas should be alert to the possibility of isolated pancreatic TB masquerading as pancreatic carcinoma; furthermore, the condition should be considered as a rare cause of obstructive jaundice. Because pre-operative diagnosis is difficult, it is imperative that ample biopsies be taken at surgery should the lesion appear irresectable. The role of resectional surgery remains unchallenged until diagnostic testing becomes more accurate and dependable.

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