

# Aspects of medical care for Australian athletes competing in the Indian subcontinent

By John Orchard

In September-October 2007 I travelled with the Australian cricket team to India for a series of one day matches. Australia will play away cricket matches against the Asian teams many times over the next few years. In cricket Australian players will also be regularly involved in the Indian Premier League (IPL) and rebel competition Indian Cricket League (ICL). In addition the Commonwealth Games will be staged in New Delhi in 2010. This article details some of the unique medical challenges for caring for athletes in India.

## History of Medical Care for Australian cricket teams on the subcontinent

According to Mike Coward<sup>1</sup> it was traditional in the late 1970s and early 1980s for Australian teams to travel to India and Pakistan with accompanying doctors. In the past, many players were affected by serious illnesses, such as hepatitis, Dengue fever and severe dehydration from gastroenteritis. The most serious outcome from illness was on the 1959 tour of India, where four players were affected by Hepatitis A. One of these, Gordon Rorke, had his first class cricket career effectively ended by the long-lasting effects of hepatitis.

At Brabourne Stadium at Mumbai CCI, the scorecard of a famous victory for India by 2 wickets against Australia in a Test in 1964-65 is displayed (see figure). The scorecard reveals that Norman O'Neill, despite selection as one of the Australian XI, was unable to bat in the game due to illness. Hence this game was part of the tradition of Australian teams being severely affected by illness in the subcontinent.



1964-65 Test scorecard, India victorious by 2 wickets over Australia

Coward reported<sup>1</sup> that the decision in 1984 to cease the practice of taking a doctor was made for two reasons. First it was felt (correctly) that compared to a doctor, a physiotherapist would provide more value for money in terms of treating injuries on tour, as injuries were more common than illnesses. Secondly, by that stage, comprehensive vaccination was available and it was thought that illnesses such as Hepatitis A, cholera, typhoid and malaria would be very rare events due to the modern vaccinations available.

The most serious medical episode involved Dean Jones, who was apparently not far from death from heat stroke during the Tied Test in 1986 in Chennai (Madras). Dean Jones pays tribute to Errol Alcott for "saving his life"<sup>1</sup> in terms of providing oral rehydration and taking him to hospital in an ambulance for intravenous rehydration once his momentous innings had finished. The situation may have been managed slightly differently if a

medical practitioner travelled with the team, as intravenous fluids could have been administered during a lunch or tea break once the diagnosis of severe dehydration and heat stroke had been established. Although Jones' innings is now part of classic Australian cricket folklore, in the fully professional era of cricket it should be remembered that intravenous rehydration is available as a technique for qualified medical practitioners that significantly reduces the likelihood of serious outcomes. As of 2008, intravenous infusions are a banned procedure under WADA rules, but are permitted "if medically indicated" and a full Therapeutic Use Exemption (TUE) is submitted. These can be approved retrospectively. Prompt emergency medical treatment should be administered prior to getting approval for a TUE.

In 2007 Cricket Australia made the decision that both a doctor and physiotherapist should accompany the national men's cricket team to matches in the Indian subcontinent.

## Preparation for Touring

### Licence to Export Restricted Items

A printed licence to export restricted medications through customs needs to be obtained from the Commonwealth Department of Health & Ageing. The can be ordered from: TMU@health.gov.au Ph: 02 6160 3252, Fax: 02 6160 3260.

This permit is primarily (but not exclusively) for the benefit of Australian customs, as Indian customs (for example) will generally treat visiting sporting teams as they would royalty on arrival in the country!



### Supplementary Medical Defence Obtained

Medical defence organisations need to grant supplementary insurance to cover overseas work with a sporting team. Outside of the USA, this insurance can be obtained for a nominal amount (approx \$300).

### Upskilling of intravenous cannulation technique

On the presumption that intravenous rehydration was quite likely to be required on the tour, I voluntarily decided to revise my skills in this area. All Australian doctors would have learnt this skill during their training, but sports physician practice does not lend itself to regular practice of intravenous cannulation skills. Due to this, I attended 5-6 operating lists and successfully inserted about 25-30 IV cannulas in patients who were happy to volunteer to have me do the procedure under the supervision of their anaesthetist.

### Player and Personal immunisation

As a first-time traveller to India I needed more personal immunisation updates than most players, who had regularly travelled and hence were up to date with most immunisations. I had a blood test which showed current immunity to Hepatitis A and B and Varicella-Zoster. I was given injections for Adult Diphtheria and Tetanus and typhoid, meningococcal and took the oral Dukoral cholera vaccine. I decided against pertussis and polio updates as I had undergone the regular childhood shots and a booster when a medical student.

During the trip I took Travelan with most meals and one doxycycline on most days for the first three weeks. [On the last week of the tour I was ill with an upper respiratory infection myself and changed my antibiotic to azithromycin].

Personally I was very conservative with food and drink, only drinking water and cold drinks from bottles, even

brushing my teeth only with bottled water. I generally avoided cold food and ate well-cooked (generally Indian) food for most meals. I used Aerogard (and sunscreen) whenever outside. This advice was given to all players and touring staff members and it was generally followed (as most were familiar with touring the subcontinent). However, I doubt that players were completely fastidious about brushing teeth with bottled water and avoiding uncooked fresh food.

### Ordering of additional medical supplies

Prior to the tour additional supplies needed to be ordered for my medical kit. In particular, intravenous fluid bags, antibiotics and anti-vomiting medications plus associated equipment (e.g. giving sets, tape) were ordered.

It is notable that pharmaceuticals are readily available in India and generally at prices that are 90% less than the same products in Australia. When we did run out of supplies (notably oral antibiotics towards the end of the tour) it was very easy to buy cheap replacement products. However, the quality control of the pharmaceutical

industry in India is not the same as in countries like Australia, New Zealand and England. It is probably higher for those companies based in Western countries that import to India than for local companies. My concern regarding the quality of Indian drugs did not extend to assuming that it was likely that a medication may be contaminated by a banned substance. It would be more costly for a cheap Indian antibiotic to have, for example, an anabolic steroid included and therefore the likelihood of this being the case was probably minuscule (comparable to the likelihood, for example, of hotel food being contaminated with anabolic steroids). The concern with Indian drugs relates more to efficacy (for example, it is quite conceivable that the real dose of the drug would be lower than that stated on the packet or that the correct expiry date may not be printed).

Where a drug brought over from Australia was available it obviously was the preferred item, but a dilemma was presented when we had run out of an Australian medication and it was the choice between an Indian one or nothing. I had enough confidence in the Indian drugs available that I was willing to offer them to players. Supporting this viewpoint is that fact that no Indian player (of which I am aware) has ever tested positive for a banned substance reported to be from inadvertent use from an incorrectly-labelled tablet.

My degree of confidence in Indian pharmaceuticals does not extend to





Indian supplements (such as creatine, which would be relatively more likely to be 'laced' with banned agents) and therefore I would strongly discourage players from using Indian supplements.

### Management of illness on tour

As expected, illness was very common in India and in fact 'medical' rather than injury problems represented 37 of 93 significant player consultations on tour (about 40%).

The most important and significant management was the use of intravenous medications and fluids in players with prolonged vomiting (+/- diarrhoea). Intravenous ("IV") fluid use in sport is somewhat controversial but it remains a very important standard and legitimate medical treatment for dehydration outside sport. The WADA approach to intravenous fluid use is that it must be for "legitimate medical indications". Certainly there have been past cases in sport which have crossed this line when it was previously a legal practice [particularly the Brisbane Lions in the AFL 2001-2002 prior to the practice being outlawed. In this scenario the team was routinely using IV fluids on 6-8 'fit' players in each half-time break]. In the NFL it is also apparently fairly standard to use IV rehydration during matches<sup>8</sup>.

I would suggest that the line in terms of acceptable use of IV rehydration (for dehydrated players) is when players are unable to orally rehydrate due to vomiting.

### Quinine use for prevention of cramps

Quinine, a component of tonic water, has a long history as a therapeutic drug. Its major indications are prevention of both malaria and muscle cramps. As an anti-malarial, it has limited effectiveness compared to other options (particularly chloroquine and doxycycline). Its most common usage is for prevention of night cramps, which most commonly affect elderly

females, although it is also used for the athletic cramps<sup>7</sup> associated with heat stress and dehydration.

Almost all of the published research on quinine involves night cramps in the elderly and from this it has been concluded that quinine has mild-moderate efficacy but with a significant risk of major side effects (particularly thrombocytopenia and atrial fibrillation). Because of this, the TGA (Aus) and FDA (US) have both removed prevention of cramps as a therapeutic indication of quinine, although this recommendation relates particularly to night cramps in



the elderly. Quinine has not ever been 'indicated' for prevention of sporting cramps but only because there has never been adequate research for this use.

For 14 years, I have personally supervised the use of quinine by professional football teams in Australia to prevent cramps. At the Swans, over 4 years, I would estimate that on hot days 25% of the team would have taken 1 x 300mg quinine sulphate (10% on cooler days). I only saw one complication, which was a presumed allergic reaction to the sulphur component. At the Roosters, over 10 years, I would estimate that on hot days 40% of the team would use one quinine tablet (15% on cooler days). I have not witnessed a complication in this time. It has been very rare for a player to have significant cramps over my entire tenure as those



players with a tendency have taken quinine on days in which they were susceptible.

Alex Kountouris (the current Australian team physiotherapist) relayed to me a similar experience with the Sri Lankan cricket team, where he gave approximately 5 players per match (on average) a quinine tablet over 7 years. This resulted in no side effects and was extremely impressive in preventing cramps. John Gloster, the Indian physio, reported similar experience to us and was using quinine in Indian players.

I am therefore strongly of the belief, based on long-term anecdotal evidence, that Quinine prevents muscular cramps in footballers and cricketers. Ideally an RCT would be the best way to confirm this observation.

### Treating people as a “Good Samaritan”

It is worth reporting that I made 33 additional consultations with touring staff members, match officials, members of the media, liaison officers and even a couple of members of the public (young cricketers) on the tour. Some of those outside our touring party approached me on the basis that they trusted a Western doctor more than the Indian medical system. I had a personal dilemma in some of these cases as my personal medical insurance only covers “members of the touring party” and not outside parties in India. However, my own philosophy as a doctor is that I would prefer to uphold Hippocratic principles than deny giving advice out of practising

ultra-defensive medicine (NB I would probably take the opposite tack in an ultra litigious society like the USA). Acting as a “Good Samaritan” for no fee is a relative defence against medicolegal action and hence it is best that any contract for services on the tour only include athletes.

### Standard of medical care in India

Unfortunately quality sports medicine practitioners in India are few and far between (and hence one of the justifications for taking a doctor on tour in the first place). Despite plenty of income from cricket, India is still stuck in the bad old days where the match day doctors can be drawn from any medical speciality, no matter how irrelevant this practice is to sports medicine (e.g. gynaecology, paediatrics). In partial defence of the various local cricket boards, there are many cities where quality options with respect to sports medicine are probably non-existent. There were some fortunate exceptions of orthopaedic surgeons with Western training/experience and up to date knowledge in the field of sports medicine, who were a pleasure to interact with.

One positive factor about the Indian medical system worth mentioning is the accessibility of cheap MRI scans. Although the quality is variable, the prices of scans are universally reasonable by world standards. The 1.5 Tesla scanners are comparable in quality (machine wise) to those found in Australia, with some 0.5 Tesla scanners available and of reasonable quality for some body parts. The reporting quality appeared to be poor, but because electronic copies



were available we were able to email and have radiologists in Australia give an extra report, which was useful.

In conclusion, the standard of sports medicine care in India is a lot lower than in Australia, but there are some surprising positive aspects to the Indian medical system. The lucrative TV rights for cricket in India will require and also ensure rapid growth and improvement of sports medicine services in India. The majority of physiotherapists working for cricket teams in India (especially IPL and ICL) are Western (Australian, English and South African in particular). It is also expected that there will be excellent high-salary opportunities for Australian sports physicians and other sports medicine & science staff in India over the next decade.

### References

1. Coward M. Cricket Beyond the Bazaar: Australia on the Indian Subcontinent: Allen & Unwin, 1990.
2. Orchard J. Intrinsic and Extrinsic Risk Factors for Muscle Strain Injury in Australian Footballers. *American Journal of Sports Medicine* 2001;**29**(3): in press.
3. Orchard J, Farhart P, Leopold C. Lumbar spine region pathology and hamstring and calf injuries in athletes: is there a connection? *British Journal of Sports Medicine* 2004;**38**:502-4.
4. Orchard J, Marsden J, Lord S, Garlick D. Preseason Hamstring Muscle Weakness associated with Hamstring Muscle Injury in Australian Footballers. *American Journal of Sports Medicine* 1997;**25**:81-85.
5. Verrall G, Slavotinek J, Barnes P. The effect of sports specific training on reducing the incidence of hamstring injuries in professional Australian Rules football players. *British Journal of Sports Medicine* 2005;**39**(6):363-8.
6. Orchard J. Understanding some of the risks for soft tissue injury--a Malcolm Blight legacy? *Journal of Science and Medicine in Sport* 2002;**5**(2):v-vii.
7. Robertson N, Hale W, Mackler L. Does quinine reduce leg cramps for young athletes? *The Journal of Family Practice* 2005;**54**(1).
8. Huizenga R. You're Okay, It's Just a Bruise. New York: St. Martin's Press, 1994.

