Ready, set, go!
The role of pharmacists in doping control in sports

30 July 2020
Moderator

Kerstin Wagner
ExCo Associate Member, Industrial Pharmacy Section

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THE FASCINATION OF SPORTS

July 23rd – August 9th, 2020
...DOPING IN SPORTS
THE FIGHT AGAINST DOPING

A matter of knowledge, science, education and care
PHARMACISTS IN THE GAME

• Who are the persons taking the doping tests?
• Who ensures the teams can bring the needed – and allowed – medication to their events?
• Who can ensure the (drug) safety of athletes in training and competition?
• Who can educate athletes, coaches, families and supporting staff on the right medication?
Programme of today’s panel

The role of the pharmacist in doping control in sports
Daniel Sanabria, Costa Rica

Olympic medical and pharmacy services
Mark Stuart, UK

Ensuring drug safety during the Beijing Olympics
Helen Zhang, China
The role of the pharmacist in sports

Daniel Sanabria
Daniel Sanabria, Costa Rica

Pharmacist and Anti-Doping Control Officer for Costa Rica and Central America
Doping in Sports
¿What is Doping?

1. Presence
2. Use
3. Refuse
4. Not Be Able
5. Manipulation
6. Possession
7. Traffic
8. Administration
9. Complicity
10. A forbidden Association
Doping Control
¿Do you know the doping control process?

Gráfico #7: Doping Control Knowledge

<table>
<thead>
<tr>
<th>Porcentaje %</th>
<th>79,9%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sí</td>
<td>20,1%</td>
</tr>
</tbody>
</table>

Prohibited List
¿Conoce usted la lista de sustancias prohibidas en el deporte?

Gráfico #8: Prohibited List Knowledge

<table>
<thead>
<tr>
<th>Porcentaje %</th>
<th>Sí</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.7%</td>
<td>64.3%</td>
<td></td>
</tr>
</tbody>
</table>

Therapeutic Use Exemption
¿Can an athlete consume a substance that is in the list?

Gráfico #9: TUE Knowlegde

- Sí: 39,6%
- No: 22,9%
- Desconozco: 37,5%

Pharmacist in Sports
<table>
<thead>
<tr>
<th>The specialty of Sports Pharmacy covers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Awareness</strong></td>
</tr>
<tr>
<td>Awareness of drugs in sport in the community, medicine &amp; industry for both performance modification and the prevention and treatment of disease.</td>
</tr>
<tr>
<td><strong>Therapy</strong></td>
</tr>
<tr>
<td>Knowledge of therapeutic use of drugs in sport and how pharmacist interventions can support sport related illness or injury.</td>
</tr>
<tr>
<td><strong>Prevention</strong></td>
</tr>
<tr>
<td>Use of pharmacotherapy to prevent sport-related illness or injury and maintain well-being.</td>
</tr>
<tr>
<td><strong>Optimisation</strong></td>
</tr>
<tr>
<td>Safe and rational use of nutrition and supplements to optimise performance.</td>
</tr>
<tr>
<td><strong>Abuse</strong></td>
</tr>
<tr>
<td>Knowledge of the use of drugs in sport for competitive advantage.</td>
</tr>
<tr>
<td><strong>Detection</strong></td>
</tr>
<tr>
<td>The science of detecting drugs of abuse in the body.</td>
</tr>
</tbody>
</table>
Sport Pharmacist Consultation
¿Do you know any app?

Gráfico #6: Knowledge of apps

Porcentaje %

<table>
<thead>
<tr>
<th>Sí</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>22,6%</td>
<td>77,4%</td>
</tr>
</tbody>
</table>

Thank You
A global overview of the role of pharmacists in international multi-sport events

Mark Stuart
Mark Stuart, UK

IOC Medical and Scientific Commission Games Group

Operations Development Manager at International Testing Agency
Olympic Medical & Pharmacy Services

Mark Stuart
The Olympic Games

- 205 Countries
- 33 Sports
- 39 Competition Venues
- 339 Events
- 56 Test Events
- 17 Days
Scope of Medical Service

- 11,000 Olympic Athletes
- 4,000 Paralympic Athletes
- 5,000 Olympic Family
- 27,000 Press and Broadcast
- 7,000 Sponsor representatives
- 200,000 Workforce
- 9 Million spectator tickets
- 400 Horses
The Olympic Medical Service must:

- Be accessible for healthcare providers and athletes from every country
- Provide continuity of treatment between every country
- International best practice
- Protect athletes from inappropriate and unsafe care
- Protect athletes from inadvertent doping
- Respect medical regulation of host country
Olympic Village Polyclinic

- Large primary care medical centre
- Sports medicine & physical therapies
- 24h emergency department
- Athlete priority
- Access to specialist services
Pharmacy Services

- 3 Polyclinic Pharmacies
- 2 Spectator – Olympic Park
- Media Centre

- Medicines information for international doctors
- Anti-doping monitoring, drugs in sport

6000 prescriptions
Venue Drugs

1. First response pack
2. Emergency medical pack
3. Stock medicines
Biggest challenges in delivering quality

- Variances in international medical practice
- Variances in medicines availability
- Variances in country laws and policy
- Limited clinical evidence in elite athletes
- Varied anti-doping knowledge & education
Drug Safety & Doping Prevention

• Prescription forms
• Pharmacy dispensing system
• Warning labels
• Shelf warnings

PROHIBITED IN SPORT
Therapeutic use exemption may be required
Olympic & Paralympic Model Medicines Formulary

Aims to standardise the drug treatment options available at all Summer, Winter and Youth Olympic & Paralympic Games

- Evidence-based medicine options
- International best practice
- Reduce variability in prescribing and availability
- Support athletes to remain doping free
- Reduce wastage and costs through rational selection
# Olympic and Paralympic model formulary 2019

## 1. Medicines for pain and inflammation

### 1.1. Non-opioids and Non-steroidal Anti-Inflammatory Drugs (NSAID)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Form</th>
<th>Strength</th>
<th>Primary indication and notes</th>
<th>WADA status</th>
<th>Needle-use Declaration required</th>
<th>Venue stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetylsalicylic acid (Aspirin)</td>
<td>Tablet or soluble tablet</td>
<td>300mg to 500mg</td>
<td>Mild to moderate pain; pyrexia <em>(refer to section 8.3 Anti-thrombotic medicines for anti-thrombotic use)</em></td>
<td>Not prohibited</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Celexoxib*</td>
<td>Tablet</td>
<td>200mg</td>
<td>Mild to moderate pain; pain with inflammation; where other NSAIDS are not tolerated or not appropriate</td>
<td>Not prohibited</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Or other oral COX-2 inhibitor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>Oral liquid</td>
<td>200mg/5mL</td>
<td>Mild to moderate pain; pain with inflammation; pyrexia</td>
<td>Not prohibited</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tablet</td>
<td>200mg; 400mg</td>
<td>Mild to moderate pain; pain with inflammation; pyrexia; dysmenorrhea</td>
<td>Not prohibited</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Naproxen*</td>
<td>Tablet</td>
<td>250mg or 500mg</td>
<td>Pain and inflammation in musculoskeletal conditions; dysmenorrhea</td>
<td>Not prohibited</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Or other oral NSAID such as meloxicam, ketorolac, or loxoprofen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paracetamol (Acetaminophen)</td>
<td>Oral liquid</td>
<td>120mg/5mL</td>
<td>Mild to moderate pain; pyrexia</td>
<td>Not prohibited</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td></td>
<td>Suppository</td>
<td>100 or 200mg</td>
<td>Mild to moderate pain; pyrexia</td>
<td>Not prohibited</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td></td>
<td>Tablet</td>
<td>500mg</td>
<td>Mild to moderate pain; pyrexia</td>
<td>Not prohibited</td>
<td></td>
<td>V</td>
</tr>
</tbody>
</table>
IOC Needle Policy

- Introduced at London 2012
- Aims to eliminate inappropriate injections and doping during the Olympic Games
- Needles can only be used by medically qualified practitioners
- Only for clinically justified treatment of injury or illness
- Requires a written medical justification by the doctor
IOC Consensus Statement on Pain Management in Elite Athletes

Issues

• Inconsistent international practices
• Lack of evidence in elite athlete
• Overuse and high doses
• Inappropriate prophylactic use
• Inappropriate use in recovery
• Doping risks

British Journal of Sports Medicine (BJSM)
IOC Consensus Statement on Dietary Supplements in Athletes

• Use of dietary supplements widespread
• Diet significantly influences athletic performance
• A few supplements may provide performance benefits for some athletes in some sports
• Risk of contaminated supplements

British Journal of Sports Medicine (BJSM)
WADA & IOC Education Collaboration

Sports Physician Toolkit

Mandatory for all physicians attending Olympics since Rio 2016

1. Identifying & Prescribing Prohibited Drugs
2. Complying with the IOC Needle Policy
3. Bringing Medicines to the Games for Team Use

www.wada-ama.org
IOC Certificate in Drugs in Sport

Launched 2018

• Safe and effective medicines use in sport
• Doping prevention
• Prohibited drugs
• Supplement use and risks
• 6 month online, awarded by the IOC
• Graduate in Lausanne
• Pharmacists, physicians and all healthcare providers

www.sportsoracle.com
International Doping Control Officer Training Program

Setting new ITA Certified standards of quality and best practice for International Doping Control Officers.
Thank You
Helen Zhang, China

Director of Pharmacy, United Family Healthcare
Ensuring Drug Safety in Pharmacy During Beijing Olympics

Helen Zhang, Pharm D
United Family Healthcare
Beijing, China
July 30, 2020
Outline

1. Background of 2008 Beijing Olympics
2. Anti-doping preparation
3. Pharmacy services preparation
4. Results and Conclusion

Objective

To understand the role and responsibilities of pharmacist during Olympic event
2008 Beijing Summer Olympics

- From August 8-24, 2008
- 37 venues
  - 31 in Beijing
  - 6 in Hong Kong, Shanghai, Qingdao, Qinhuangdao, Shenyang and Tianjin
Potential Health Concerns

- Infectious Diseases
  - Risk of pandemic
  - Food and water safety
- Air pollution and respiratory diseases
- Motor vehicle accidents
- Fake medication
- Use of stimulants
- Lack of clean toilets

Unfamiliar Health Risks
Medical facilities for Olympics

- **Clinics:**
  - A total of 176 Olympic clinics will be put into use next July:
    - 96 are for Olympic venues
    - 60 are for training centers
    - 20 are for other purposes
    - 41 are for athletes
    - 55 are for spectators

- **Ambulances:**
  - 200 will be stationed outside Olympic venues

- **Doctors:**
  - 3,000 volunteer doctors, mostly from major medical universities in Beijing, with a Master's degree or higher, while others are from BOCOG designated hospitals
Medical Infrastructure

- 22 official Olympic hospitals in Beijing
  - 5,000 emergency hospital beds
  - 19 emergency medical teams
  - 160,000 medical personnel
My Main Responsibilities as Pharmacy Director for UFH During Olympics

1. Ensuring that doping agents would not be dispensed to athletes inadvertently
2. Providing pharmacy services and medications in an efficient and effective manner
3. Ensuring safety and quality of medication used
Outline

1. Background of 2008 Beijing Olympics
2. Anti-doping preparation
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4. Results and Conclusion
Anti-Doping

- In 2007, the Chinese State Food and Drug Administration (SFDA) and the International Olympic Committee (IOC) decided on the “Doping” drug list or “Prohibited List”
- It contained 767 brands of Western medicines and 1,227 kinds of Chinese herbal products

8 classes of Prohibited substance:
- stimulants
- narcotics
- anabolic agents
- glucocorticoids
- beta-2 agonists
- diuretics
- hormones and metabolic modulators
- peptide hormones
The International Olympic Committee
Anti-Doping Rules
applicable to the Games of the XXIX Olympiad,
Beijing 2008

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Olympic Doping Test

Positive tests

Anticipated number of tests

2008 Beijing

2012 London

2016 Rio de Janeiro

2020 Tokyo
Educating community on healthy sports engagement
Anti-doping Undertaking Ceremony
Pharmacy Stores
Medication

All products on the prohibited list should have “运动员慎用” or “Precautions for Athletes” in the package insert or warning stickers on the outside box.
Antidoping Preparation in Hospital

1) Compiling hospital’s own antidoping drug list
2) Educating all staff about the list
3) Alerts on the Hospital Information Systems and on the medication shelves
4) Requesting athletes to identify themselves upon admission to hospital
5) Steps to take if usage of “prohibited” medications were necessary including patient consent form
**Athlete's Alert.**

**Script Type**: Outpatient

**Medication**

| Albuterol 100mcg/dose Inhaler (Ventolin, proventil) |

**Dose/Form**: 2 puffs

**Frequency**: Q6h

**Route**: INHALATION

**Duration**: 

**Qty/Pack Size**: 1 Bottle of 200 doses

**Start**: 31 Aug 2009

**End**: 

**Directions**: Shake well before using
TUE: Therapeutic Use Exemption
ATUE: Abbreviated Therapeutic Use Exemption

Athletes with a documented medical condition requiring the use of a Prohibited Substance or a Prohibited Method must first obtain a TUE or ATUE from IOC

Example: Glucocorticoids
• PO/IV/IM use for medical condition need TUE
• Inhalation/IA/IT use need ATUE
• External use is not prohibited
POLYCLINIC PRESCRIPTION

Date: MM/DD/2008

Identity: □ Athlete  Sports item: ………………… □ NOC/NPC Staff

Patient’s details
Name: ………………………… □ Male □ Female Age: ………
ID No.: ………………………… NOC/NPC: ……………………………

RX

Drug [Generic name]: …………………………………………………………………
Dose ……………………… Form: ………………………………………
Quantity: ……………………… Route: ………………………………
Frequency: ………………………………………………………………………

Medical practitioner
[Seal and signature]: ……………………………………………………………
Accreditation No.: ………………………… NOC/NPC: …………………

For prescription of substances prohibited by WADA to athletes:
Athlete’s signature: ……………………………………………………………
Pharmacist’s signature: ………………………………………………………

For dispenser: /
Dear Mr. President,

We confirm that we received your submitted TUE application for Mr. Strade Alzen Yamamoto with ISSF ID number 283204000101 and confirm that the application has been approved for Formoterol and Budesonide till 4.07.09.

Please ensure that the application as well as this confirmation letter is with the athlete at all times.

Thanking you for your kind cooperation, I remain

With best regards

Horst G. Schreiber
ISSF Secretary General

TUE Approval letter by IOC
Outline

1. Background of 2008 Beijing Olympics
2. Anti-doping preparation
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4. Results and Conclusion
Ensuring Drug Supply

- Drug procurement issues:
  1. Increased demand:
      - Government stockpile
      - Increased number of patients
      - Sichuan earthquake (especially blood products)
  2. Decreased supply
      - Tighter quality control
      - Closing of substandard factories
Drug Supply Chain

- Ensure traceability of all drugs from manufacturer – wholesaler – retailer/hospitals
- 15 patrol vehicles for medication quality testing for rapid and accessible testing in Beijing
- Use of best available brands
- Add English translation for drugs labels + information sheets
Warehouse:
Stock For Olympics
Athletes use only

Ensuring medication complies with quality standards – mobile station
Government inspections

1. Pharmacy license and personnel record
2. Drug procurement documents
3. Good receipt records
4. Drug storage records
5. Anti-doping regulations
6. Special medication management
Special drug regulation: Medicinal Toxic Drugs
Outline

1. Background of 2008 Beijing Olympics
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Results

- Weekly inspections passed with high remarks
- 20% increase in patient volume in our hospital
- Most common illness – minor sport injuries, heat strokes, allergies and gastrointestinal problems
- “zero” case of accidentally dispensing of doping agents to athletes
Conclusion

• Keys to successful preparation:
  1. Early planning
  2. Know your Prohibited list
  3. Maintaining a constant and transparent relationship with governing bodies
  4. Reliable suppliers
  5. Supportive hospital administrators and staff
Take Home Message – as a pharmacist

- Proactive communication
- Information dissemination and documentation
- Raise awareness

*Balance between antidoping and clinical need*

*If you have excellent risk management process..................then*
THE OLYMPICS ARE A CELEBRATION OF SPORT, PEACE AND HARMONY IN THE WORLD

Thank you!
Any questions?

Please use the Q&A tool

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Wrap up & Conclusions
Thank you for attending!