NSAID´s in der Physiotherapie

Seegen oder Fluch?

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Fortbildungen für Orthopädische Medizin und Manuelle Therapie
Kurzer Blick in die Physiologie
Kurzer Blick in die Physiologie

Bischoff, HP: Praxis der konservativen Orthopädie
Kurzer Blick in die Physiologie

Forth, W: Allgemeine und spezielle Pharmakologie
Acid cascade continues on the lipo-oxygenase pathway. Dins from arachidonic acid, while one part of the arachidonic oxygenase (Cox), thus inhibiting the synthesis of prostaglandins. NSAIDs, according to their plasma half-life.

Table 1 also be administered topically or via intramuscular injection. They are absorbed by the digestive system, enter the bloodstream, and are metabolized by the liver or the kidneys. NSAIDs can be used as a protective measure against injuries, but it is important to consider their potential harmful long-term consequences. Whether the injury be to the ligament, tendon, bone or muscle, NSAIDs are frequently used in sports medicine. We chose a total of 55 articles from PubMed and Embase, from 1997 to 2008, with the following keywords: non-steroidal anti-inflammatory, musculoskeletal pain.

This article doesn't attempt an exhaustive analysis of the literature on this subject. Rather, it provides an update destined to classify these articles with respect to their methodological quality. We didn't attempt to create a meta-analysis or random controlled studies. We didn't attempt to further investigate the role of NSAIDs in the motor system pathologies encountered in athletes. This article doesn't attempt an exhaustive analysis of the literature on this subject. Rather, it provides an update destined to classify these articles with respect to their methodological quality. We didn't attempt to further investigate the role of NSAIDs in the motor system pathologies encountered in athletes. We chose a total of 55 articles from PubMed and Embase, from 1997 to 2008, with the following keywords: non-steroidal anti-inflammatory, musculoskeletal pain.

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1.2.2. Adverse effects

Migration, aggregation and neutrophile and macrophage functions are also inhibited. Two Cox iso-enzymes (which probably have sub-classes) have been identified: a constitutive form called Cox-1 and an inducible form called Cox-2. Cox-2 is overexpressed locally in cases of inflammation, and the prostaglandin synthesis that results from this overexpression supports the lesional process. Traditional NSAIDs inhibit the cyclo-oxygenase functions.

These recent developments raise an "ethical" order to encourage immediate performance improvements, or to take into account the short-term analgesic effect of NSAIDs in athletes. Independent of their analgesic effect, the athletes take them as a preventive measure on the day of a game. Warner et al. found a similar occurrence in their study of school athletes. Similarly, a survey of American football players showed that one out of seven high school athletes took NSAIDs daily and the 29% of college athletes used NSAIDs after an injury.

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Eisatzmöglichkeit der NSAID´s

• Verschiedene Zielsetzungen
  • Anästhesie
  • Chirurgie
  • Orthopädie
Einsatz der NSAID’s

• **Anästhesie:**
  • Bedarf an Opiaten senken.

• Alternativen in Studien:
  • Tramadol + Paracetamol
  • Pregabalin
  • Gabapentin

• Aktuelle Leitlinie:
  Kritisches Überdenken des Einsatz von NSAID’s bei orthopädischen Patienten.
Einsatz der NSAID’s

• **Chirurgie:**
  - Verhinderung heterotope Ossifikation z.B. bei Hüft-TEP.
  - Klinische Relevanz bleibt unklar.
  - Aktuelle Empfehlung: Abwägung zwischen NSAID und lokaler Bestrahlung.
    - NSAID’s mindern Knochenheilung!
Einsatz der NSAID’s
Carter 2015, Ärzteblatt 2013, Maiman 1982

• Orthopädie:
  – Rheumatischer Formenkreis
  – Universalmedikament für Schmerzlinderung und Entzündungshemmung?

<table>
<thead>
<tr>
<th>Medikament</th>
<th>Defined Daily Dose gesamt 2013</th>
<th>DDD pro Tag 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibuprofen</td>
<td>422,4 Mio</td>
<td>1,16 Mio</td>
</tr>
<tr>
<td>Diclofenac</td>
<td>419,5 Mio</td>
<td>1,15 Mio</td>
</tr>
</tbody>
</table>
mostly intra-articular, followed by intramuscular applications.

Acetylsalicylic acid is not suitable for use in sports medicine.

Injections with local anaesthetics or corticosteroids were performed in almost 8% of all players participating in the tournament.

Other analgesics (such as paracetamol (acetaminophen) and ibuprofen) are widely used as over-the-counter analgesics. Nonetheless, non-steroidal anti-inflammatory drugs (NSAIDs) are the most frequently prescribed application form, especially between injuries reported and reported use of medication.

Injections are performed in a minority of athletes, mostly prior to each game. In many cases, local anaesthetics or corticosteroids are used to relieve pain and prevent further injury. However, their use might worsen the injury if play is resumed immediately. The short term safety of intra-articular application may substantially worsen the injury if play is resumed immediately.

Limited to international football. Similar use of medication has been reported during the Sydney Olympics in 2000, however, no data is available from international football tournaments between 2003 and 2010.

An unpublished review of articles published during the Sydney Olympics found that power/sprint disciplines show a similar incidence of NSAID use (6.8±0.2 vs 2.3%±0.1) increased significantly (p<0.05). In endurance disciplines, NSAID use was significantly lower (1.8±0.3 vs 27.3%±0.4 in power/sprint disciplines), their declared use of NSAIDS was not reported. Nevertheless, such repetitive practice during a tournament increases the risk for traumatic injuries.

There was no difference in use of medication and NSAIDs, in male players as well as in 2.3% of female adults and 1.2% of male adolescents participating in the tournament.

The high use of medication and NSAIDs in particular is not limited to international football. Similar use of medication has been reported during the Sydney Olympics in 2000, however, no data is available from international football tournaments between 2003 and 2010.

The medical team (ie, likely team physician) was an important determinant of medication use, as well as age and injury location. Also, allopurinol was used to treat gout.

Injections of peritendinous or intra-articular glucocorticoid injections prior to matches were performed infrequently, as it was thought to prevent skeletal and cardiac muscle damage and to protect tendon integrity. Also, allopurinol was used to treat gout.

In the past, NSAIDs have been widely used, although percutaneous application of NSAIDs might be as efficacious as oral preparation in the treatment of soft-tissue inflammation and pain. They might be as efficacious as oral preparation in the treatment of soft-tissue inflammation and pain.

Injections and medication were frequently prescribed during the 2014 FIFA World Cup, one country reported using more than one type of NSAIDs per player per match throughout the tournament.

In many cases, local anaesthetics or corticosteroids are used to relieve pain and prevent further injury. However, their use might worsen the injury if play is resumed immediately.
• Hypothetischer Benefit:
  • Während sportlicher Belastung:
    • Weniger Krämpfe
    • Weniger Schmerzen
    • Höhere Leistung
  
  • Post- sportliche Belastung:
    • Schnellere Regeneration leichter Verletzungen
    • Weniger Muskelkater
• Hypothetischer Benefit:
  • Während sportlicher Belastung:
    • Weniger Schmerzen → NEIN
    • Weniger Krämpfe → NEIN
    • Höhere Leistung → keine verlässlichen Daten, vermutlich kein Medikamenteneffekt
NSAID’s im Sport
Kjaer 2013, Trappe 2002, Mackey 2013, Ziltener 2010

- Hypothetischer Benefit:
  - Post sportliche Belastung:
    - Weniger Muskelkater \(\rightarrow\) NEIN
  - Schnellere Regeneration leichter Verletzungen \(\rightarrow\) NEIN
„Kannst Du nicht mehr gehn, nimmst Du Voltaren....“

„Ein Indianer kennt keinen Schmerz....“
• Spanischer Konsens 2015 – muskuläre Beschwerden:

**Table 1. Therapeutic Indications in the Inflammatory Phase**

<table>
<thead>
<tr>
<th>Unanimity</th>
<th>Strongly Recommend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cryotherapy</td>
<td>Compressive bandage</td>
</tr>
<tr>
<td>Elevation</td>
<td>Non-use of NSAIDs</td>
</tr>
<tr>
<td>Sport Rest</td>
<td>No weightbearing of affected limb</td>
</tr>
<tr>
<td>No complete immobilization</td>
<td>Drain haematoma with symptoms</td>
</tr>
<tr>
<td>Analgesia</td>
<td>Inflammation bioregulators</td>
</tr>
<tr>
<td></td>
<td>Ecography after 48/72 hours</td>
</tr>
<tr>
<td></td>
<td>Mobilize affected area as tolerated</td>
</tr>
</tbody>
</table>
• Fazit und Ausblick
  • 48 h post Verletzung keine oralen NSAID
  • Analgesie mit Paracetamol, evtl. Opiate
  • Topische analgetische Anwendung mit Sprays
  • Kurzfristiger Benefit für Subgruppen nicht auszuschließen
  • Langfristige generelle Nachteile relativ sicher
Konzept der FOMT

• Integration der besten Ergebnisse
  • „eigene Leitlinien“-Erarbeitung
    • NSAID’s für welche Patientengruppe, zu welchem Zeitpunkt in welcher Dosierung
    • Benefit und Risiken

• Alternativen: Homöopathie, Akupunktur,...
Vielen Dank für die Aufmerksamkeit!

Fragen, Literaturliste und Rehanewsletter unter:

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