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Pharmacological Action and Clinical Application of Commonly Used

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Abstract

Antipyretic drugs are one of the most commonly used drugs in clinical practice today, and have extensive and far-reaching research value. This article reviews several common clinical antipyretics, including ibuprofen, acetaminophen (also known as paracetamol), lysine, and Bupleurum. To guide physicians in the correct medication in clinical, improve the patient's treatment effect.

Keywords

Antipyretics; Ibuprofen; Acetaminophen; Lysine; Bupleurum.

1. Ibuprofen

Ibuprofen (Ibuprofen), also known as pulling wind, antipyretic and analgesic, non-steroidal anti-inflammatory drugs, can inhibit cyclooxygenase, reduce the synthesis of prostaglandins, play analgesic and anti-inflammatory effects. Antipyretic effect through the thermoregulatory center of the hypothalamus.

By comparing the clinical application of ibuprofen and other antipyretic drugs and their efficacy, the antipyretic effect and the superiority of early intervention of serum inflammatory factors in children with systemic inflammatory response syndrome were determined. 88 children were randomly divided into ibuprofen group and routine treatment group. Before and after treatment, body temperature, white blood cell count, erythrocyte sedimentation rate, CRP (C-reactive protein), TNF-observation and recording α (tumor necrosis factor-α), according to IL-16 (Interleukin-6) and other numerical changes to estimate its effect. Results: The antipyretic time of Huier in the ibuprofen group was significantly shorter than that in the conventional treatment group, and the white blood cell count, IL-6 and erythrocyte sedimentation rate were higher than those in the control group, $P<0.05$. There was no significant difference in the CRP ratio between the two groups. No side effects after taking the medicine. It can be seen that ibuprofen has anti-inflammatory effects, and its anti-inflammatory mechanism is related to the inhibition of IL-16.

2. Acetaminophen

Paracetamol, also known as Tylenol, Panadol, Bufferin. This product is a metabolite of phenacetin in the body. By controlling the body temperature of the hypothalamus, it regulates the central prostaglandin synthase and reduces the synthesis and release of prostaglandins PGE1, peptides and histamine. PGE1 mainly acts on the nerve center. Due to its decrease, the thermoregulatory point in the center decreases, the body surface temperature sensor is relatively hot, and the peripheral blood vessels dilate through the nerve regulation, and sweating plays an antipyretic effect.

A total of 110 children with high fever (T≥39℃) were used as the observation objects, and they were treated with ibuprofen + acetaminophen alternately for antipyretic treatment, and the curative effect was observed. On the basis of conventional treatment (anti-infection and

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rehydration treatment), Tylenol contains 100 mg of acetaminophen per 1 ml, 10 mg/kg once, and the child takes medication for 4 hours. The body temperature is less than 0.5 °C, but it does not drop, but rises. The sporin granules contain 0.2 g of cyclosporine, 5 mg/kg once administered, alternately used every 4 to 6 hours, and the course of treatment should not exceed 3 days. Observation of curative effect: 64 patients with acute upper respiratory tract infection and fever after medication had a significant cooling effect, the effective rate was 95.31%, 27 patients with lower respiratory tract infection and fever after medication, the effective rate was 92.59%, and 19 patients with fever after medication, the effective rate was 73.68%. It is more convenient to take the medicine, which can avoid the fear brought by long-term intramuscular injection and intravenous drip injection to children, and improve children's treatment cooperation. These two antipyretics have different mechanisms of action, and alternate use can reduce the dose while maintaining the antipyretic effect. If the dosage of each drug is relatively reduced, the side effects caused by the use of the drug will naturally be reduced. However, due to the improper use of doses by parents, it will increase meaningless risks. During the use process, parents must accurately understand the dose and interval of each administration, master the adverse reactions of administration, and use the minimum effective dose while ensuring antipyretic effect. In conclusion, the alternating use of acetaminophen and ibuprofen is a reliable choice for clinical treatment of children with high fever.

3. Lysine

Lysine (Aspirin/lysine) is a double salt of aspirin and lysine. Non-steroidal anti-inflammatory drugs can be decomposed into lysine and aspirin in the body. Aspirin has antipyretic, analgesic, anti-inflammatory and anti-platelet aggregation effects. Compared with aspirin, the drug has the characteristics of being easily soluble and less irritating to the gastrointestinal tract.

Oral ibuprofen suspension for antipyretic treatment of 68 patients with acute respiratory infection and fever, and compared with lysine. A total of 118 cases with body temperature ≥39.5℃ were divided into two groups. There were 68 cases in the treatment group (ibuprofen group) and 50 cases in the control group (lysine-pirin group), and there was no significant difference in gender, age, body temperature, and disease distribution between the two groups (P>0.05). The treatment group was given oral ibuprofen suspension (containing 20mg ibuprofen per milliliter) 5-25mg/kg, 3 times/d, while the control group was injected with lysine 10-25mg/kg gluteal muscle. The two groups were treated with the same etiology and symptoms for the primary disease, and the drug was discontinued when the patient's body temperature returned to normal. Lysine is a compound salt of aspirin and lysine. It has antipyretic and anti-inflammatory effects mainly by inhibiting the activity of cyclooxygenase and reducing the synthesis of prostaglandins and thromboxane. Faster, longer lasting results. Because the two drugs have a rapid antipyretic effect. Quick results. The duration of fever reduction is longer and the side effects are small, and they are all drugs approved by the state for marketing. According to the results of this experiment, the effect and side effects of ibuprofen suspension are not much different from those of lamivlin intramuscular injection, but the patient's fear of injection is reduced, which can avoid the inconsistency of treatment. In addition, the suspension has a sweet taste and good taste, which can be taken smoothly by almost all children, and the phenomenon of vomiting is less, and the injection of the drug can avoid iatrogenic infection and iatrogenic injury. Therefore, ibuprofen suspension is a safe and effective antipyretic for children.

4. Chaihu

Bupleurum is widely used in various diseases with fever symptoms, and its antipyretic ability has been recognized by physicians of all dynasties. There are 8 kinds of Bupleurum

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preparations in "Chinese Pharmacopoeia" (2005 edition), including Bupleurum Oral Liquid and Bupleurum Injection. In addition to Chaihu Zhenke Tablets and Chaihu Shugan Pills, the remaining 6 kinds can be used to reduce fever. The "Chinese Pharmacopoeia" expresses the function of Bupleurum as "reconciling the inside and outside, soothing the liver, and raising the yang". Although it does not directly write that Bupleurum has antipyretic functions, it points out that Bupleurum can treat fever.

Regarding the antipyretic function of Bupleurum, the Tang Dynasty had already recognized the power of reconciling and reducing fever, purging phlegm and strengthening heat, and reducing deficiency and heat. After the Tang Dynasty, it was supplemented and improved. It is believed that Bupleurum not only has the power of "reconciling and reducing fever", It also has the ability to "dissolve the surface and dissipate heat", which expands the application scope of Bupleurum to reduce fever, making it widely used in clinical practice. Summarizing the experience of predecessors, the antipyretic functions of Bupleurum can be summarized as relieving external heat, reconciling and reducing fever, clearing and purging excess heat (including phlegm, dampness, liver, gallbladder, lung, and Sanjiao excess heat), and relieving deficiency heat.

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