Hexoprenaline:
A Review of its Pharmacological Properties and Therapeutic Efficacy with Particular Reference to Asthma

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Table of Contents

Summary ........................................................................................................................................ 2
1. Pharmacodynamic Studies ........................................................................................................ 4
  1.1 Animal Studies .................................................................................................................... 4
     1.1.1 β-Adrenoreceptor Selectivity ...................................................................................... 4
     1.1.2 Bronchodilator Effects ................................................................................................ 5
     1.1.3 Cardiovascular and Circulatory Effects ...................................................................... 5
     1.1.4 Metabolic Effects ........................................................................................................ 6
     1.1.5 Drug Interactions ........................................................................................................ 6
     1.1.6 Toxicological Studies .................................................................................................. 6
  1.2 Human Studies .................................................................................................................... 7
     1.2.1 Bronchodilator Effects ................................................................................................ 7
     1.2.2 Cardiovascular Effects ............................................................................................... 9
     1.2.3 Actions at Other β-Adrenoreceptors ..................................................................... 10
     1.2.4 Metabolic Effects ........................................................................................................ 11
     1.2.5 Effects on Blood Coagulation and Fibrinolysis ....................................................... 11
2. Pharmacokinetic Studies ......................................................................................................... 12
  2.1 Absorption ........................................................................................................................ 12
  2.2 Distribution ....................................................................................................................... 12
  2.3 Metabolism and Excretion ............................................................................................... 12
Hexoprenaline: A Review

Summary

3. Therapeutic Trials ........................................................................................................................ 13
   3.1 Controlled Trials .................................................................................................................. 13
      3.1.1 Oral Hexoprenaline ................................................................................................... 13
      3.1.2 Inhaled Hexoprenaline .............................................................................................. 14
      3.1.3 Intravenous Hexoprenaline ....................................................................................... 16
   3.2 Open Trials .......................................................................................................................... 17
      3.2.1 Oral Administration .................................................................................................... 19
      3.2.2 Inhaled Hexoprenaline .............................................................................................. 20
      3.2.3 Intravenous Administration ....................................................................................... 21
   3.3 Status Asthmaticus .............................................................................................................. 23
4. Side-Effects ................................................................................................................................ 25
5. Contraindications and Precautions ............................................................................................ 25
6. Dosage and Administration .......................................................................................................... 25
   6.1 Inhalation ............................................................................................................................ 25
   6.2 Oral .................................................................................................................................... 26
   6.3 Intravenous ........................................................................................................................ 26

Synopsis: Hexoprenaline¹, N,N-[2-(3,4-dihydroxyphenyl)-2-hydroxyethyl] hexamethylenediamine, sulphate is a selective β₂-adrenoreceptor agonist which is active in man as a bronchodilator by the oral or intravenous routes and by inhalation. It is indicated for use in the treatment of bronchospasm associated with obstructive airways diseases, including asthma, bronchitis and emphysema.

Clinical experience and double-blind studies have established that hexoprenaline is an effective bronchodilator. Its major advantage over many other bronchodilators of equal efficacy is its generally low production of side-effects, particularly tremor, palpitations, and tachycardia. In comparative trials, it has generally been rated as superior to orciprenaline or trimetoprim, but comparisons with salbutamol have provided equivocal results. Oral hexoprenaline was superior to fenoterol as long-term maintenance therapy in asthma, principally because its somewhat lesser bronchodilatory effects were more than compensated for by a lesser incidence of side-effects.

Pharmacodynamic Studies: Both in animals and humans, hexoprenaline is markedly longer in action than other catechol-containing β₂-agonists, such as isoprenaline and rimiterol. It protects asthmatic patients against bronchoconstriction induced by histamine, acetylcholine and allergens. Hexoprenaline is effective by inhalation and by the oral and intravenous routes, and is similar to salbutamol in onset and duration of action. Significant effects on the cardiovascular system are seen after oral or inhaled doses, only at levels several fold greater than those required for significant bronchodilatation, though a pronounced increase in heart rate occurs a few minutes after intravenous administration, and a moderate increase may occur after repeated oral dosage. Hexoprenaline has been given to asthmatic patients with hypertension of all grades of severity, and to others with cardiac disease, by all three routes of administration without causing adverse cardiovascular effects. Like other sympathomimetic amines, hexoprenaline has a lipolytic and glycogenolytic effect, but this does not apparently interfere significantly with glucose utilisation in diabetic patients inhaling the drug or receiving it intravenously. In general, hexoprenaline does not affect blood-gas values or acid-base status, though one trial reported a significant hypoxemia following inhala-

¹ 'Ipradol' (Chemie Linz), 'Etoscol' (Byk Gulden).