Report on New Patented Drugs

NovoRapid

Brand Name:	NovoRapid
Generic Name:	insulin aspart
DIN:	02244353 100 units/ml injectable
Patentee:	Novo Nordisk Canada Inc.
Indication (as per product monograph):	For the treatment of patients with diabetes mellitus who require insulin for the maintenance of normal glucose homeostasis. NovoRapid should normally be used in regimens together with an intermediate or long-acting insulin.
Notice of Compliance:	July 18, 2001
Date of First Sale:	February 1, 2002
ATC Class:	A10AB05 *Insulins and analogues, fast-acting*

Under its transparency initiative, the Board publishes the results of the reviews of new patented drugs by Board Staff, for purposes of applying the PMPRB's Price Guidelines, for all new active substances introduced after January 1, 2002.

Application of the Guidelines

Summary:

The introductory price of NovoRapid was found to be within the Guidelines because the cost of therapy did not exceed the cost of therapy of existing drugs in the therapeutic class comparison and did not exceed the range of prices in other comparator countries where NovoRapid was sold.

Scientific Review:

NovoRapid is a new active substance and the Human Drug Advisory Panel (HDAP) reviewed it as a category 3 new medicine (provides moderate, little or no therapeutic advantage over comparable medicines).

Members of the same 4th level ATC class as NovoRapid available on the Canadian market include Novolin ge Toronto (insulin human), Humulin R (insulin human), Iletin II Regular (insulin pork), Humalog (insulin lispro) and Humalog 25 (combination of insulin and insulin lispro protamine).

Iletin II Regular (insulin pork) is infrequently utilized in Canadian diabetic patients (see website of the Canadian Diabetes Association at www.diabetes.ca) and thus, was not included in the TCC. Humalog 25 (combination) was also not included in the TCC as it is a combination product.

The majority of diabetics are managed with either genetically engineered human insulin (Novolin ge Toronto, Humulin R) or insulin lispro (Humalog). Humalog shares a similar profile to NovoRapid, both being considered fast- and short-acting mealtime insulins. The premise behind the modifications in these agents, as compared to regular insulin, is that they can be absorbed more readily and have a faster onset of action, more closely mimicking the action of normal pancreatic insulin. Humalog represents the most similar insulin to NovoRapid and is thus, the primary comparator for the conduct of the TCC. The PMPRB's Guidelines provide that the dosage recommended for comparison purposes will normally not be higher than the maximum of the usual recommended dosage. The recommended comparable dosage regimens for NovoRapid and the comparators are based on respective product monographs and clinical trial data.

The Therapeutic Class Comparison (TCC) test of the Guidelines provides that the price of a category 3 new drug product cannot exceed the prices of other drugs that treat the same disease or condition. Comparators are generally selected from among existing drug products in the same 4th level of the Anatomical, Therapeutic, Chemical (ATC) System that are clinically equivalent in addressing the approved indication. See the PMPRB's *Compendium of Guidelines, Policies and Procedures* for a more complete description of the Guidelines and the policies on TCCs on our website at **www.pmprb-cepmb.gc.ca**, under Frequently Requested Items.

According to the product monograph of NovoRapid, individualization of the dosing is required. Typically, the total daily individual insulin requirement is between 0.5 to 1.0 U/kg/day. If given as part of a meal-related treatment program, 50 to 70 percent of this requirement may be provided by NovoRapid with the remainder provided by either an intermediate or long-acting insulin. Overall in the studies, patients were transferred on a unit to unit basis, with titration as required.

As a result, the comparable dosage regimen was established using a dosage format common to all agents, specifically the 100u/ML 3mL penfill/cartridge. See table in the following price test section.

Price Review:

Under the Guidelines, the introductory price for a new category 3 drug product will be presumed to be excessive if it exceeds the price of all of the comparable drug products based on the TCC test, and if it exceeds the prices of the same medicine in the seven countries listed in the *Patented Medicines Regulations*.

As shown in the following table, the price of NovoRapid was within the Guidelines relative to the TCC test as it was slightly less than the price of the other rapid-acting agent, Humalog.

Name	Strength	Dosage Regimen	Unit Price	Cost Per Day
Short-Acting Insulins				
Rapid-acting:				
NovoRapid	100 unit/ml	1 x 3 ml penfill	$3.06[1]	$9.18
Humalog	100 unit/ml	1 x 3 ml cartridge	$3.07[2]	$9.21
Regular insulin:				
Humulin R	100 unit/ml	1 x 3 ml cartridge	$2.14[2]	$6.42
Novolin ge Toronto	100 unit/ml	1 x 3 ml penfill	$2.14[2]	$6.42

1 PPS, July 2002
2 Ontario Drug Benefit Formulary, 2001

Evidence/ Reference:

The list of references are available on the PMPRB website, under Publications, Patented Medicines; Reports on New Patented Drugs; NovoRapid

NovoRapid is sold in France, Germany, Italy, Sweden, Switzerland, the United Kingdom and the United States. The price in Canada is lower than the price in the United States and therefore was within the Guidelines relative to the highest price component of the International Price Comparison Test.

Where comparators and dosage regimens are referred to in the Summary Reports, they have been selected by the PMPRB Staff and the Human Drug Advisory Panel (HDAP) for the purpose of carrying out the PMPRB's regulatory mandate, which is to review the prices of patented medicines sold in Canada to ensure that such prices are not excessive. The publication of these reports is also part of the PMPRB's commitment to make its price review process more transparent.

The information contained in the PMPRB's Summary Reports should not be relied upon for any purpose other than its stated purpose and is not to be interpreted as an endorsement, recommendation or approval of any drug nor is it intended to be relied upon as a substitute for seeking appropriate advice from a qualified health care practitioner. ■