Meet Jenny

Jenny is a 9-year-old mixed-breed dog who was diagnosed with diabetes mellitus (DM) based on the clinical signs of polyuria/polydipsia and laboratory findings of hyperglycemia and glucosuria. She weighs 22 lbs and was started on 5 units neutral protamine hagedorn (NOVOLIN® N) insulin twice per day.

Her clinical signs improved but did not resolve, and her owners found that they were having difficulty administering insulin twice per day due to new work schedules. Additionally, Jenny was difficult to feed in the evening, and her owners were worried about hypoglycemia with twice-daily insulin injections.

Understandably, Jenny’s owners were frustrated about their inability to treat her appropriately and that her clinical signs had not completely improved. They questioned whether they could properly care for her and were considering euthanasia. They are not alone.

Finding the Right Therapy

Insulin replacement is the definitive therapy for DM in dogs. Stable dogs may be started on intermediate-long-acting insulins that generally require subcutaneous administration.

There are many types of insulins on the market that differ by the pharmacologic mechanism by which they are made into a repository form. The most commonly used insulins in dogs in the US are porcine lente (VETSULIN®) and NPH (NOVOLIN® N, HUMULIN® N), that are optimally given twice per day.²

Human recombinant protamine zinc insulin was licensed for use in dogs in 2019.

In a field trial of over 220 dogs, PROZINC® (protamine zinc recombinant human insulin) was shown to be effective in 60% of dogs treated once per day.³

Newly diagnosed dogs were given PROZINC at 0.7 U/kg once daily. If transitioned from twice-daily insulin, the dose is 25% less than the 24-hour dose given once daily. Final PROZINC insulin doses are 1.4 U/kg once daily or divided and given twice daily. Dogs are optimally fed twice daily, even when getting PROZINC once daily, although they can be fed once daily to align with the owner’s schedule. Owners should be cautioned to keep the daily calories controlled to prevent weight gain that may result in insulin resistance.

Treating Jenny

Jenny was started on PROZINC insulin at 7.5 units once per day. She was fed once per day and continued to graze on the food throughout the day. Her insulin dose was gradually raised to 10 units once per day, and that provided good clinical control.

Her owners were delighted that her insulin regimen could fit into their schedule and that they did not have to be overly concerned about hypoglycemia.

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IMPORTANT SAFETY INFORMATION: PROZINC is for use in dogs and cats only. Keep out of the reach of children. Owners should be advised to observe for signs of hypoglycemia (low blood sugar). Signs may include weakness, depression, behavioral changes, muscle twitching, and anxiety. In severe cases of hypoglycemia, seizures and coma can occur. Hypoglycemia can be fatal if an affected animal does not receive prompt treatment. PROZINC should not be used during episodes of hypoglycemia (low blood sugar). Appropriate veterinary monitoring of blood glucose, adjustment of insulin dose and regimen as needed, and stabilization of diet and activity help minimize the risk of hypoglycemic episodes. The attending veterinarian should evaluate other adverse reactions on a case-by-case basis to determine if an adjustment in therapy is appropriate, or if alternative therapy should be considered. The safety and effectiveness of PROZINC in puppies, kittens, or breeding, pregnant, and lactating animals has not been evaluated. For more information, refer to the PROZINC for Cats and Dogs Brief Summary or visit prozinc.us for full prescribing information.


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Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

Description: PROZINC is a sterile aqueous protamine zinc suspension of recombinant human insulin.

Each mL contains: recombinant human insulin 40 International Units (IU), protamine sulfate 0.466 mg, zinc oxide 0.088 mg, glycerin 16.00 mg, dibasic sodium phosphate, heptahydrate 3.78 mg, phenol (added as preservative) 2.50 mg, hydrochloric acid 1.63 mg, water for injection (maximum) 1005 mg, pH is adjusted with hydrochloric acid and/or sodium hydroxide.

Indication: PROZINC (protamine zinc recombinant human insulin) is indicated for the reduction of hyperglycemia and hypoglycemia-associated clinical signs in dogs with diabetes mellitus. PROZINC is contraindicated during episodes of hypoglycemia.

Warnings:

User Safety: For use in dogs and cats only. Keep out of the reach of children. Avoid contact with eyes. In case of contact, immediately flush eyes with running water for at least 15 minutes. Accidental injection may cause hypoglycemia. In case of accidental injection, seek medical attention immediately. Exposure to product may induce a local or systemic allergic reaction in sensitized individuals.

Animal Safety: Owners should be advised to observe for signs of hypoglycemia. Use of this product, even at established doses, has been associated with hypoglycemia. A dog with signs of hypoglycemia should be treated immediately. Glucose should be given orally or intravenously as dictated by clinical signs. Insulin should be temporarily withheld and, if indicated, the dosage adjusted.

Any change in insulin should be made cautiously and only under a veterinarian’s supervision. Changes in insulin strength, manufacturer, type, species (human, animal) or method of manufacture (rDNA versus animal-source insulin) may result in the need for a change in dosage. Appropriate diagnostic tests should be performed to rule out other endocrinopathies in diabetic dogs that are difficult to regulate.

Precautions: Dogs presenting with severe ketoacidosis, anorexia, lethargy, and/or vomiting should be stabilized with short-acting insulin and appropriate supportive therapy until their condition is stabilized. As with all insulin products, careful patient monitoring for hypoglycemia and hyperglycemia is essential to attain and maintain adequate glycemic control and to prevent associated complications. Overdose can result in profound hypoglycemia and death. Glucocorticoids, progestogens, and certain endocrinopathies can have an antagonistic effect on insulin activity. Glucocorticoid and progestogen use should be avoided.

The safety and effectiveness of PROZINC in breeding, pregnant, and lactating cats and dogs has not been evaluated.

The safety and effectiveness of PROZINC in kittens and puppies has not been evaluated.

Adverse Reactions: In a 182-day field study, 276 dogs received PROZINC. The most common adverse reactions were lethargy, anorexia, hypoglycemia (low blood sugar), vomiting, seizures, shaking, diarrhea, and ataxia. Clinical signs of hypoglycemia varied and included seizure, collapse, ataxia, staggering, trembling, twitching, shaking, disorientation, lethargy, weakness, and vocalization.

Information for Dog Owners: PROZINC, like other insulin products, is not free from adverse reactions. Owners should be advised of the potential for adverse reactions and be informed of the associated clinical signs. The most common adverse reaction observed is hypoglycemia. Signs may include weakness, depression, behavioral changes, muscle twitching, and anxiety. In severe cases of hypoglycemia, seizures and coma can occur. Hypoglycemia can be fatal if an affected dog does not receive prompt treatment. Appropriate veterinary monitoring of blood glucose, adjustment of insulin dose and regimen as needed, and stabilization of diet and activity help minimize the risk of hypoglycemic episodes. The attending veterinarian should evaluate other adverse reactions on a case-by-case basis to determine if an adjustment in therapy is appropriate, or if alternative therapy should be considered.

Effectiveness: A total of 276 client-owned dogs were enrolled in an 84-day field study followed by a 98-day extended-use phase with 276 dogs receiving PROZINC. The dogs included various purebred and mixed breed dogs ranging in age from 2 to 16 years and in weight from 3.3 to 123 pounds. Effectiveness was based on successful control of diabetes which was defined as improvement in at least one laboratory variable (blood glucose curve mean, blood glucose curve nadir, or fructosamine) and at least one clinical sign (polyuria, polydipsia, or weight loss). Based on this definition, 162 of 224 cases (72%) were considered successful. Approved by FDA under NADA # 141-297

Marketed by: Boehringer Ingelheim Animal Health USA Inc. Duluth, GA 30096

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