

Supplementary Material to:**Article title**

Preferences, expectations and attitudes on basal insulin from patient-physician-payer perspective.
A multi-stakeholder survey by the Italian Diabetes Society
(ITA4P study)

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Questionnaire for patients

1. Self-reported demographics
 - a. Sex (M/F)
 - b. Age
2. Diabetes type (type 1, type 2, gestational, other, don't know)
3. Are you currently on insulin therapy (Yes / No)
 - a. If yes, type of insulin (basal, mealtime, both)
 - b. If no, have you ever used Insulin in the past?
4. Are you satisfied with current insulin therapy? Rate from 1 (not at all satisfied) to 10 (extremely satisfied)
5. How concerned are you about the following aspects potentially related to starting insulin therapy?
 - a. fear of hypoglycemia
 - b. weight gain
 - c. injection anxiety
 - d. loss of independence or freedom
6. To assert that insulin therapy has been successful, how important do you consider each of the following factors? *For each of these factors, please rate from 1 (not at all important) to 10 (extremely important)*
 - a. Achieving good HbA1c (<7%)
 - b. Achieving optimal fasting glucose (80-140 mg/dl)
 - c. Avoiding hypoglycemic episodes
 - d. Avoiding weight gain
 - e. Maintaining professional and personal freedom without therapy limitations
 - f. Reducing risk of chronic complications (retinopathy, diabetic foot, etc.)
7. What do you believe are the disadvantages (limitations) associated with the basal insulin currently available? *For each of these factors, please rate from 1 (not at all relevant) to 10 (extremely relevant):*
 - a. Risk of hypoglycemia
 - b. Daily administration requirement
 - c. Difficulty adhering to treatment at a set time daily
 - d. Uncertainty on management during acute illness
 - e. Requirement for frequent blood glucose monitoring (1-2 times per day)
 - f. Frequent autonomous decision-making, especially around physical activity

DESCRIPTION: A new basal insulin, which could soon be available, would be administered once a week rather than daily. With this new insulin, a single injection would deliver the insulin units for the entire week (e.g., 10 units per day = 70 units per week).

8. How likely would you be to use this type of insulin for your diabetes management? (from 1 to 10)
9. How relevant do you consider the following potential benefits of this therapy? *Rate from 1 (minimal advantage) to 10 (maximum advantage):*
 - a. It allows reducing the number of injections
 - b. It reduces the need to ask a family member for help with administration
 - c. It reduces the risk of forgetting the therapy
 - d. It's easy to adjust the dosage, either increasing or decreasing it if necessary
 - e. I can forget about insulin administration for six out of seven days

10. Regarding this weekly insulin, how relevant do you consider the following aspects associated with the therapy? *Rate each aspect from 1 (minimal relevance) to 10 (maximum relevance):*
- a. Large insulin dose administration in a single injection
 - b. Concerns over potential increased hypoglycemia with this treatment
 - c. Concern that hypoglycemic episodes may be prolonged and challenging to manage
 - d. Uncertainty on management during acute illness
 - e. Uncertainty on management during physical activity

Questionnaire for physicians

1. Self-reported demographics
 - a. Sex (M/F)
 - b. Age
2. Region of residence
3. Primary specialty
 - a. Diabetology
 - b. Endocrinology
 - c. Internal medicine
 - d. Nutrition science
 - e. Other
4. Secondary specialty
 - a. Diabetology
 - b. Endocrinology
 - c. Internal medicine
 - d. Nutrition science
 - e. Other
 - f. None
5. Primary work setting
 - a. Outpatient clinic
 - b. Outpatient diabetes service
 - c. Hospital diabetes service
 - d. Private practice
 - e. Other
6. What glycemic-related motivations guide your decision to initiate basal insulin therapy in a patient with type 2 diabetes previously on non-insulin therapy?
 - a. Improve fasting blood glucose
 - b. Lower HbA1c
 - c. Reduce glycemic variability
 - d. Effectively control hyperglycemia and symptoms
 - e. Maintain long-term glycemic control
7. What non-glycemic objectives could be achieved by timely initiation of basal insulin therapy in a type 2 diabetes patient?
 - a. Improve overall patient well-being/quality of life
 - b. Prevent/Delay microvascular complications
 - c. Prevent/Delay macrovascular complications
 - d. Prevent acute complications
 - e. Simplify therapy and/or reduce other medications (e.g., secretagogues)
8. In your clinical experience, which of the following potential advantages of initiating basal insulin therapy could improve adherence among patients with type 2 diabetes? *Rate from 1 (completely disagree) to 5 (completely agree) for each response:*
 - a. Improved HbA1c
 - b. Reduced glycemic variability
 - c. Decrease in number of pills
 - d. Greater dietary management flexibility
 - e. Prevention of microvascular complications
 - f. Prevention of macrovascular complications

9. Regarding the following challenges, what extent could they delay the decision to initiate basal insulin therapy in your patients with Type 2 diabetes?
 - a. Risk of nighttime hypoglycemia
 - b. Risk of hypoglycemia over 24 hours
 - c. Variability of fasting blood glucose
 - d. Time required for patient education
 - e. Subcutaneous administration
 - f. Daily administration requirement
 - g. Potential weight gain
10. How much impact do the following patient-experienced challenges have on the effectiveness of basal insulin therapy?
 - a. Missed doses of basal insulin by the patient
 - b. Difficulty with insulin titration by the patient
 - c. Difficulty with insulin titration by the physician
 - d. Insufficient frequency of outpatient follow-ups
 - e. Patient self-reduction of insulin doses
 - f. Patient demotivation following insulin therapy initiation
 - g. Insulin administration errors
11. How effective might the following actions be in reducing therapeutic inertia among physicians in initiating basal insulin therapy for Type 2 diabetes? *Rate each action from 1 to 5, where 1 indicates "not at all" and 5 indicates "completely"*:
 - a. Educational initiatives for patient support
 - b. Educational initiatives for physician support
 - c. Availability of continuous glucose monitoring for patients on basal insulin alone
 - d. Use of technological tools to aid in self-titration of basal insulin for both patient and physician
 - e. Availability of new systems to facilitate self-injection and reduce injection site pain/discomfort and complications

DESCRIPTION: A new basal insulin, which could soon be available, would be administered once a week rather than daily. With this new insulin, a single injection would deliver the insulin units for the entire week (e.g., 10 units per day = 70 units per week).

12. To what extent do you agree with the following statements?
 - a. Weekly administration medications have improved patient acceptance on starting injectable treatments.
 - b. Weekly administration medications have improved treatment adherence.
 - c. The future possibility of fixed-dose combinations of weekly insulin with other weekly medications (e.g., GLP-1 RAs) may facilitate prescribing basal insulin.
 - d. The half-life of weekly insulin could lead to a reduction in glycemic variability.
13. What reasons might lead you to NOT consider weekly insulin over daily basal insulin?
 - a. Increase in the risk of mild hypoglycemia
 - b. Similar or only slightly greater effectiveness in HbA1c reduction
 - c. Higher costs of weekly basal insulin compared to daily administration
 - d. Administering a high dose of insulin in a single injection
 - e. Potential risks during hospital admissions
14. What do you expect from using weekly basal insulin compared to daily basal insulin?
 - a. Improvement in patient quality of life resulting from a significant reduction in the number of injections
 - b. Improved patient adherence to weekly basal insulin therapy
 - c. Reduced daily glycemic variability
 - d. Similar or lower hypoglycemic risk

- e. Greater efficacy in HbA1c reduction
- f. Significant reduction in injection site complications
- g. Lesser weight gain
- h. Increased flexibility in self-administration timing

Questionnaire for payers

1. Self-reported demographics
 - a. Sex (M/F)
 - b. Age
2. Region of residence
3. Degree
 - a. Pharmacy
 - b. Biology
 - c. Medicine
 - d. Other
4. Current professional role
 - a. Community pharmacist
 - b. Healthcare organization
 - c. Member of a pharmaceutical company
 - d. Purchase department
 - e. Health organization director
 - f. Hospital pharmacist
 - g. Other
5. In evaluating basal insulin therapy, how important do you consider the following elements? *Rate from 1 (completely disagree) to 5 (completely agree) for each response:*
 - a. Improvement in fasting glucose
 - b. Improvement in HbA1c
 - c. Improvement in glycemic variability
 - d. Reduction in the number of severe hypoglycemic episodes
 - e. Reduction in total hypoglycemic episodes
 - f. Reduction in the number of injections
6. What results do you think diabetes patients might achieve with weekly basal insulin administration compared to daily administration? *Rate from 1 (completely disagree) to 5 (completely agree) for each response:*
 - a. Improvement in HbA1c
 - b. Improvement in fasting glucose
 - c. Reduction in glycemic variability
 - d. Increased adherence to insulin therapy
 - e. Reduction in chronic complications
 - f. Reduction in acute complications (e.g., hypoglycemia, ketoacidosis)
 - g. Improvement in quality of life
7. **How important** do you consider the following characteristics for weekly basal insulin compared to daily insulin? (agreement from 1 minimum to 5 maximum)
 - a. Simplification of administration
 - b. Increased therapy adherence
 - c. Improvement in glycemic control
 - d. Significant reduction in injections number
 - e. Low frequency of hypoglycemic episodes
 - f. Quality of life improvement
 - g. Reduced environmental impact
8. What do you see as the **major barriers** to the use of weekly basal insulin? (agreement from 1 minimum to 5 maximum)
 - a. Cost of the medication

- b. Aspects concerning patient or caregiver education
 - c. Difficulty in titrating insulin
 - d. Concerns about administering a large insulin dose at once
 - e. Fear of hypoglycemic episodes
 - f. In-hospital management
9. In your opinion, to what extent do the benefits of weekly basal insulin justify a higher cost compared to daily insulin? *Rate from 1 (completely disagree) to 5 (completely agree) for each response:*
- a. Improving disease control and reaching glycemic targets in more patients
 - b. Improving therapy adherence
 - c. Improving quality of life (e.g. reduction of administrations, flexibility)
 - d. Reducing other direct costs (e.g., needles, blood glucose strips, hospitalizations)
 - e. Reducing indirect costs (e.g., work absences, need for caregivers)
 - f. Reducing environmental impact (e.g., fewer needles, caps)