Anthem

Medical Policy

Subject: Insulin Potentiation Therapy
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Description/Scope

This document addresses insulin potentiation therapy (IPT): administration of insulin as an adjunctive agent to potentiate the effects of pharmacologic therapy in the treatment of cancer as well as infectious diseases, chronic degenerative disorders, fibromyalgia, chronic fatigue syndrome, arthritis, and many other conditions. The adjunctive use of insulin is believed to enhance the effect of chemotherapy by “opening up” the receptors on cancer cells to increase absorption of the pharmacological agent or chemotherapy, thereby lowering the effective chemotherapy dose.

Position Statement

Investigational and Not Medically Necessary:

Insulin potentiation therapy (IPT) is considered **investigational and not medically necessary** for the treatment of cancer, infectious diseases, chronic degenerative disorders, and all other conditions.

Rationale

There is currently only one published randomized controlled trial (RCT) evaluating the effects of IPT in metastatic breast cancer (Lasalvia-Prisco, 2004). The trial studied 30 women with metastatic breast cancer and measurable lesions resistant to fluorouracil, adriamycin, cyclophosphamide, and also hormone therapy. Participants were divided into 3 separate groups, each consisting of 10 women. Group 1 received two 21-day courses of insulin and methotrexate; group 2 received two 21-day courses of methotrexate; and group 3 received two 21-day courses of insulin. In each subject, the size of the target tumor was measured before and after treatment. The changes in the size of the target tumor in the 3 groups were compared statistically. The median increase in tumor size was significantly lower with insulin and methotrexate than with each drug used separately. The authors concluded that insulin enhanced the chemotherapy effect. While this study may suggest insulin enhances a biochemical event with the administration of chemotherapy in the short term, it does not report any long-term effects or health outcomes. Therefore, further studies are warranted to provide more conclusive evidence of any improvement in health outcomes with the use of insulin potentiation therapy.

In a non-randomized study, Damyanov and colleagues (2012) evaluated the results and quality of life (QOL) of 16 men with castration-resistant prostate tumors previously treated with IPT combined with hormone therapy. The individuals were divided into 2 groups of 8 men. Group A had been treated with low-dose chemotherapy (epirubicin, vinblastine, and cyclophosphamide combined with goserelin depot) and group B had been treated with low-dose chemotherapy (docetaxel combined with goserelin depot). Prostate specific antigen (PSA) results after 6 treatments of IPT showed partial effect in 50% of the men, stabilization in 25%, and progression in 25%. The authors concluded that the advantage of this method was its effectiveness along with improved QOL; however, well-designed RCTs are needed for routine implementation of IPT.

The majority of the evidence regarding IPT is derived from individual (anecdotal) case reports. Even among these, however, there has been no evidence that those who reported being helped by IPT were followed long enough to verify treatment efficacy. IPT has also reportedly been used as treatment for fibromyalgia, chronic fatigue syndrome, arthritis, and some infections. However, the safety and efficacy of this therapy have not been confirmed with well-designed clinical trials for these additional indications.

In a 2019 review regarding IPT and its underlying physiology theory, Sissung and colleagues note the poor quality of the two published studies assessing IPT and note:

> Further clinical evidence on IPT is not likely to be forthcoming and stands in stark contrast with the claims of supporters who say IPT is safe and effective. On the contrary, there is substantial scientific evidence that insulin treatment and increased concentrations of intracellular sugars accelerate both tumour progression and chemoresistance.

Background/Overview

IPT involves administering insulin at the same time as chemotherapy and other medications, with the idea that lower drug doses are then needed because insulin lets more of the drug enter cells. However, evidence is lacking to support this theory.

IPT was developed in the 1930s in Mexico by Donato Perez Garcia, Sr, MD and has been explored by a few physician practices (Ayre, 2000). IPT involves fasting for 6 to 8 hours, followed by initiation of intravenous (IV) fluids, and administration of an insulin dose based on body weight. For those with cancer, low doses of chemotherapy drugs are administered a few minutes later after the initiation of insulin to lower blood sugar. This is called the “therapeutic moment” by some IPT providers.

At this point, a treated individual usually has some symptoms of hypoglycemia, which can be quite severe, especially during first-time treatment, as responses may vary to a standard dose of insulin. As a result, the IV infusion can be modified to a high-sugar solution to raise the blood sugar. After the symptoms of low blood sugar begin to improve, food may be given to raise the blood sugar further. At the next treatment, the insulin dose may be raised or lowered, depending on the individual’s response to the first dose. Administration of insulin to non-diabetics can decrease blood sugar to dangerously low levels, causing symptoms such as headache and delirium.

Coding

The following codes for treatments and procedures applicable to this document are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services are Investigational and Not Medically Necessary:

For the following procedure and diagnosis codes **only when describing insulin potentiation therapy**, or when the code describes a procedure indicated in the Position Statement section as investigational and not medically necessary.

CPT	
96549	Unlisted chemotherapy procedure [when specified as insulin potentiation therapy]
HCPCS	
	For the following codes **only when described as related to insulin potentiation therapy**:
J1815	Injection, insulin, per 5 units [***only*** *when provided as part of insulin potentiation therapy*]
J1817	Insulin for administration through DME (i.e., insulin pump) per 50 units [***only*** *when provided as part of insulin potentiation therapy*] **Note:** all other administration of insulin is not addressed in this document
ICD-10 Diagnosis	
	For the following diagnoses **only** when the treatment is specified as insulin potentiation therapy:
A00.0-B99.9	Certain infectious and parasitic diseases
C00.0-C96.9	Malignant neoplasms
D00.00-D09.9	In situ neoplasms
M00.00-M19.93	Infectious arthropathies, inflammatory polyarthropathies, osteoarthritis
M79.7	Fibromyalgia
R53.81-R53.83	Other malaise and fatigue
Z51.11-Z51.12	Encounter for antineoplastic chemotherapy and immunotherapy
Z85.00-Z85.9	Personal history of malignant neoplasm

References

Peer Reviewed Publications:

1. Ayre SG, Garcia y Bellon DP, Garcia DP Jr. Insulin, chemotherapy, and the mechanisms of malignancy: the design and the demise of cancer. Med Hypotheses. 2000; 55(4):330-334.
2. Ayre SG, Perez Garcia y Bellon D, Perez Garcia D Jr. Insulin potentiation therapy: a new concept in the management of chronic degenerative disease Med Hypotheses. 1986; 20(2):199-210.
3. Damyanov C, Gerasimova D, Maslev I, Gavrilov V. Low-dose chemotherapy with insulin (insulin potentiation therapy) in combination with hormone therapy for treatment of castration-resistant prostate cancer. ISRN Urol. 2012; 2012:140182.
4. Lasalvia-Prisco E, Cucchi S, Vazquez J, et al. Insulin-induced enhancement of antitumoral response to methotrexate in breast cancer patients. Cancer Chemother Pharmacol. 2004; 53(3):220-224.
5. Sissung TM, Schmidt KT, Figg WD. Insulin potentiation therapy for cancer? Lancet Oncol. 2019; 20(2):191-192.

Websites for Additional Information

1. Complementary and Alternative Medicine for Cancer (CAM-Cancer). Insulin Potentiation Therapy. August 9, 2020. Available at: https://cam-cancer.org/en/insulin-potentiation-therapy. Accessed on September 18, 2023.

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Document History

Status	Date	Action
Reviewed	11/09/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Updated Websites for Additional Information section.
Reviewed	11/10/2022	MPTAC review. Updated Websites for Additional Information section.
Reviewed	11/11/2021	MPTAC review. Updated Rationale and References sections.
Reviewed	11/05/2020	MPTAC review. Updated Description, Background, Websites for Additional Information and Index sections.
	10/01/2020	Clarified wording in Coding section.
Reviewed	11/07/2019	MPTAC review. Updated Websites section.
	04/24/2019	Converted document category from DRUG.00034 to MED.00128.
Reviewed	11/08/2018	MPTAC review.
Reviewed	10/31/2018	Hematology/Oncology Subcommittee review. Websites for Additional Information section updated.
Reviewed	11/02/2017	MPTAC review.
Reviewed	11/01/2017	Hematology/Oncology Subcommittee review. The document header wording updated from “Current Effective Date” to “Publish Date.” Websites for Additional Information section updated.
Reviewed	11/03/2016	MPTAC review.
Reviewed	11/02/2016	Hematology/Oncology Subcommittee review. Websites for Additional Information section updated.
Reviewed	11/05/2015	MPTAC review.
Reviewed	11/04/2015	Hematology/Oncology Subcommittee review. Rationale, Background/ Overview, References and Websites for Additional Information sections updated. Removed ICD-9 codes from Coding section.
Reviewed	11/13/2014	MPTAC review.
Reviewed	11/12/2014	Hematology/Oncology Subcommittee review. Rationale and Reference sections updated.
Reviewed	11/14/2013	MPTAC review.

Reviewed	11/13/2013	Hematology/Oncology Subcommittee review. References updated.
Reviewed	11/08/2012	MPTAC review.
Reviewed	11/07/2012	Hematology/Oncology Subcommittee review. Rationale, Reference, and Index sections updated.
Reviewed	11/17/2011	MPTAC review.
Reviewed	11/16/2011	Hematology/Oncology Subcommittee review. Rationale and reference link updated.
Reviewed	11/18/2010	MPTAC review.
Reviewed	11/17/2010	Hematology/Oncology Subcommittee review. Description, rationale, background, and references updated.
Reviewed	11/19/2009	MPTAC review.
Reviewed	11/18/2009	Hematology/Oncology Subcommittee review. Rationale, background, coding, and references updated. Web sites for additional information section added.
Reviewed	11/20/2008	MPTAC review.
Reviewed	11/19/2008	Hematology/Oncology Subcommittee review. Rationale and reference link updated.
	10/01/2008	Updated Coding section with 10/01/2008 ICD-9 changes.
Reviewed	11/29/2007	MPTAC review.
Reviewed	11/28/2007	Hematology/Oncology Subcommittee review. Rationale and references updated. The phrase “investigational/not medically necessary” was clarified to read “investigational and not medically necessary.”
New	12/07/2006	MPTAC review.
New	12/06/2006	Hematology/Oncology Subcommittee review. Initial document development.

Applicable to Commercial HMO members in California: When a medical policy states a procedure or treatment is investigational, PMGs should not approve or deny the request. Instead, please fax the request to Anthem Blue Cross Grievance and Appeals at fax # 818-234-2767 or 818-234-3824. For questions, call G&A at 1-800-365-0609 and ask to speak with the Investigational Review Nurse.

Federal and State law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage. The member’s contract benefits in effect on the date that services are rendered must be used. Medical Policy, which addresses medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.