Tozinameran

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Subacute thyroiditis: 5 case reports

In a case report, five patients (2 men and 3 women) aged 26–44 years were described, who developed subacute thyroiditis following vaccination with tozinameran [*routes and dosages not stated; not all outcomes stated*].

Case 1: A 41-year-old man was admitted to the endocrinology outpatient department with complaints of palpitations, fatigue and anterior neck pain. Three days prior to his admission, he had undergone vaccination with the second dose of tozinameran [Pfizer/BioNTech vaccine] for COVID-19. He also reported experiencing fatigue and mild neck pain after his first dose of tozinameran (30 days prior to the second dose). Laboratory findings after the first dose showed suppressed TSH (0.38 mIU/L). Physical examination revealed heart rate 97 beats/min, BP 135/80mm Hg, body temperature 37.3°C and RR 18 breaths/min with an enlarged, painful and sensitive thyroid gland. Laboratory investigations indicated suppressed TSH along with elevated fT3, fT4, CRP and ESR levels. Thyroid ultrasonography (USG) showed heterogeneous tissue with pseudonodular areas and a reduction in the bilateral focal parenchymal echogenicity. Doppler USG showed a decrease in blood flow. A diagnosis of subacute thyroiditis secondary to tozinameran was confirmed. He received treatment with propranolol and aspirin [acetylsalicylic acid]. His symptoms showed improvement but intermittent neck pain was observed. Treatment was discontinued after few weeks following complete resolution of his symptoms. During biochemical follow-up, he developed non-symptomatic overt hypothyroidism, which resolved following treatment with levothyroxine-sodium [levothyroxine]. Laboratory findings at the last follow-up were normal and he was evaluated in a complete remission and euthyroid status.

Case 2: A 40-year-old woman was admitted to the outpatient department with complaints of neck pain. Prior to her admission, laboratory investigations indicated subclinical hyperthyroidism. She also reported experiencing sweating, palpitation and neck pain for a month. It was noted that these symptoms presented after 6 days of her vaccination with the second dose of tozinameran [Pfizer/BioNTech vaccine]. A diagnosis of subacute thyroiditis was confirmed due to a sensitive and painful thyroid gland along with an acute-phase reactant elevation. She received treatment with propranolol and naproxen. A minimal reduction in acute-phase reactants was observed but her fT3 and fT4 levels increased and TSH suppression deepened at 1-week of follow-up. In the second week of treatment, symptoms showed no relief and her treatment compliance was concluded to be weak. She was then hospitalised. Physical examination revealed heart rate 83 beats/min, BP 120/75mm Hg, RR 15 breaths/min and body temperature 36.3°C along with a painful and sensitive thyroid gland. Doppler USG showed reduced blood flow and thyroid USG indicated heterogeneity in the bilateral multiple hypoechoic areas and in the thyroid parenchyma. Laboratory investigations revealed suppressed TSH and increased levels of fT3 and fT4. Anti-Tg was also positive at a low titre (160 IU/mL). A diagnosis of subacute thyroiditis secondary to tozinameran was confirmed. She received treatment with propranolol and aspirin. After week 2 of control, her symptoms showed improvement and she was recommended to be on control for the first month of treatment.

Case 3: A 40-year-old man was admitted to the outpatient department with a 2-week history of fatigue, nervousness and left anterior neck pain. His past history was significant for smoking for 15 years. He had undergone vaccination with the first dose of tozinameran [Pfizer/BioNTech vaccine] on 01 August 2021. After 4 days of vaccination, his symptoms developed and showed a gradual increase. Physical examination revealed body temperature 36.6°C, BP 130/85mm Hg, heart rate 78 beats/min and RR 15 breaths/min along with an enlarged, painful and sensitive thyroid gland. Elevated levels of CRP and ESR were also observed. Thyroid USG showed 1.5–2cm sub-capsular heterogeneous hypoechoic thyroiditis area in the left thyroid lobe. A diagnosis of subacute thyroiditis secondary to tozinameran was confirmed. He received treatment with ibuprofen and was scheduled for an outpatient follow-up after 2 weeks.

Case 4: A 26-year-old woman presented to the outpatient department with laboratory findings of hyperthyroidism. She had experienced left-sided neck pain for 2 weeks. Previously, she had received SARS-COV-2-vaccine-inactivated-Sinovac-Biotech [CoronaVac] twice on 14 January 2021 and 11 February 2021 but reported no complaints following these vaccinations. On 01 July 2021, she received her first dose of tozinameran [Pfizer/BioNTech vaccine] and 21 days later, routine tests indicated fT3 4.43 ng/L, fT4 1.95 ng/dL and TSH 0.01 mIU/mL. Physical examination revealed heart rate 81 beats/min, RR 14 breaths/min, BP 120/70mm Hg and body temperature 36.7°C. Warmth and tenderness was observed in the left thyroid lobe. Laboratory findings showed suppressed TSH along with increased fT4, fT3, anti-Tg, anti-TPO, CRP and ESR levels. Thyroid USG showed approximately 2cm heterogeneous and hypoechoic thyroiditis region with an irregular border. Doppler USG showed reduced blood flow in the left thyroid lobe. ^{99m}Tc pertechnetate thyroid scintigraphy imaging showed a suppressed thyroid gland. A diagnosis of subacute thyroiditis secondary to tozinameran was confirmed. She was commenced on a treatment with propranolol and aspirin. After week 2 of control, her symptoms showed resolution. At 1-month follow-up, fT3, fT4, TSH and acute-phase reactants were normal and treatment was discontinued. She was scheduled for an outpatient follow-up after a month to analyse the risk of possible hypothyroidism following subacute thyroiditis.

Case 5: A 44-year-old woman was admitted to the outpatient department with a 2-month history of tremor, sweating, palpitation, headache and anterior neck pain. Her pain showed relief with the use of unspecified non-steroidal anti-inflammatories [non-steroidal anti-inflammatory drugs] at the time of extreme pain episodes. She had undergone vaccination with tozinameran [Pfizer/BioNTech vaccine] on 19 April 2021 and 20 May 2021. The onset of symptoms was observed after 9 days of the first dose and showed gradual deterioration following the second dose. She was also receiving levothyroxine sodium for her underlying Hashimoto's thyroiditis. Physical examination revealed body temperature 36.5°C, BP 110/70mm Hg, RR 14 breaths/min and heart rate 88 beats/min along with an enlarged, painful and sensitive thyroid gland. Laboratory analysis showed suppressed TSH and elevated fT3, fT4, CRP and ESR levels. Anti-TPO level was detected at 362 IU/mL. Thyroid USG showed diffuse hypoechoic and heterogeneity regions and Doppler USG indicated a reduced thyroid blood flow. A diagnosis of subacute thyroiditis secondary to tozinameran was confirmed. She was initiated on a treatment with ibuprofen. In few weeks, her symptoms showed complete resolution. After 1 month of control, acute-phase reactants and fT3, fT4 and TSH levels were normal and her treatment was discontinued. She was scheduled for an outpatient follow-up after a month to analyse the risk of possible hypothyroidism following subacute thyroiditis.

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