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Figure 1: Serum urate at different timepoints: Estimates are unadjusted means at week -8 and 0 (dotted line; n=155) and least square means estimates from an ANCOVA model (adjusted for stratification factors, i.e. sex, age category, obesity class as well as the level of the outcome at baseline) for data at 52 weeks (solid lines; n=134). Solid points at week 52 indicate the liraglutide group (n=69) and open points indicate the placebo group (n=65). The error bars indicate SE.

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OP0173

IMMUNOMODULATION CO-THERAPY WITH PEGLOTICASE: DATABASE TRENDS 2014-2019

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Background: Pegloticase is a PEGylated biologic therapy for patients with uncontrolled gout who have not improved on or could not tolerate conventional urate-lowering therapies.¹ All biologics have the ability to engender anti-drug antibodies (ADAs) and it is known that some patients given pegloticase develop ADAs that cause them to stop treatment prior to receiving a complete course of therapy.²⁻³ In other rheumatic autoimmune diseases, DMARDs such as methotrexate or azathioprine are used as standard of care to prevent the development of ADAs to biologics. These DMARDs often allow patients to remain on biologic therapies longer and receive the full therapeutic benefits while minimizing adverse events.⁴ While pegloticase has been used traditionally as monotherapy, recent case series have demonstrated the therapeutic benefit of immunomodulator co-administration, allowing more patients to receive a full course of pegloticase therapy.⁵⁻⁶ Little has been published on how widespread this practice is and whether it has changed over time.

Objectives: To examine medical claims database from 2014-2019 for trends in immunomodulating therapies being co-prescribed with pegloticase.

Methods: An IQVIA claims database (November 2014 to October 2019) representing 1.3 billion claims, covering 30 million patients diagnosed with gout or CKD, was utilized to search for patients who had received pegloticase. Patients who had received pegloticase were classified as having been on an immunomodulating co-therapy if they were prescribed methotrexate or azathioprine within 60 days before or after initiation of their first pegloticase infusion.

Results: We found relatively steady low rates of immunomodulation co-therapy with pegloticase from 2014 through 2018 ranging from 1% in 2016 to 4% in 2018 (Figure 1). In 2019 however, the proportion of pegloticase patients that were co-treated with methotrexate or azathioprine therapy increased to 15%. Most patients were started on immunomodulating therapy 20 days before to 10 days after initiation of pegloticase. Methotrexate was the more frequently used immunomodulation co-therapy as compared to azathioprine.

Figure 1: Proportion of pegloticase patients receiving immunomodulation therapy by year

*Note – any patient starting either methotrexate (MTX) or azathioprine (AZA) within 60 days of their first pegloticase infusion date

Conclusion: We found evidence of a relatively dramatic increasing initiation of immunomodulation therapy with pegloticase beginning soon after a November 2018 presentation of a case series which demonstrated improved response rates of pegloticase when co-administered with methotrexate. These data indicate that clinicians began to more frequently employ a strategy of DMARD co-treatment with pegloticase in 2019 to improve response rates to this important gout medicine.

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OP0174

POLYDATIN PREVENTS CALCIUM PYROPHOSPHATE CRYSTAL-INDUCED ARTHRITIS IN MICE

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Background: Acute calcium pyrophosphate (CPP) crystal-induced inflammation is characterized by the massive release of cytokines and pro-inflammatory mediators and, from a clinical point of view, pain and limited joint function. Contrary to the precipitation of urate crystals that can be prevented through the use of hypouricemic drugs, there is no pharmacological therapy that can prevent the formation of pyrophosphate crystals.

Polydatin (PD), a natural precursor of resveratrol, is a stilbenoid mainly contained in grape juice and bark of *Polygonum cuspidate*. Its antioxidant, anti-inflammatory and immunomodulating properties have been demonstrated in several experimental models. We have recently shown that this compound is able to prevent the inflammatory response to pathogenic crystals in vitro (1).

Objectives: The aim of this study was to assess the anti-inflammatory preventing effect of polydatin in the mouse model of acute crystal-induced arthritis.

Methods: A suspension of sterile CPP crystals (0.3mg/20 µL PBS) have been injected intra-articularly (i.a.) into one ankle joint of Balb/c mice under isoflurane anesthesia. Animals were randomized in 5 groups: 1- CPP injection, 2- CPP + PD, 3- CPP + colchicine (control drug), 4- CPP + vehicle (control. N 1), 5- PBS injection (control. N. 2). Polydatin and colchicine were administered by gavage (respectively 40mg/kg and 1mg/kg in 200 µL PBS/EtOH/glucose) at 24, 15 and 1 h before and 1, 6 and 24 h after (prophylactic model) or 1, 6 and 24 h after (therapeutic model) i.a. injection of CPP crystals.

Ankle swelling was measured at different time points using a precision caliper. After 48h (peak of the acute phase) mice were euthanized and blood and ankle