are routinely considered and are extensively dealt with in the tendency to underestimate its relevance in clinical practice. Androgen excess in men with severe acne has been much less studied, and there may be a cause with sublingual cobalamin preparation, and assessed the efficacy of treatment. Cobalamin deficiency was defined as serum cobalamin concentration less than 200 pg/mL (normal concentration 200-900 pg/mL), shown by two consecutive tests. Ten men and eight women were enrolled. The mean age was 48-1 years (range 23-80). Five patients had pernicious anaemia, seven were vegetarians, and two had Crohn’s disease (ileitis). Four patients, all male, were long-term blood donors. No patient was anaemic. We gave patients sublingual nuggets of 1000 µg cobalamin (Solgar Laboratories, Leonia, NJ, USA). Cobalamin is isolated from yeast fermentation medium, which provides a product that is technically yeast free.

On the basis of preliminary results (data unpublished) two sublingual nuggets of cobalamin (total daily dose of 2000 µg), were given for 7-12 days, after informed consent was obtained. To ensure full compliance and complete absorption of the drug, we asked patients to drink a glass of water to avoid mouth dryness, and then to hold nuggets under their tongue, until completely dissolved, 30 min before breakfast. We measured serum cobalamin concentrations before therapy and 2 days after completion of the loading phase. Although all patients followed the instructions, three patients took the drug for 12-14 days, and one patient continued to take the drug for 28 days by his own decision.

The mean serum cobalamin concentration before treatment was 127.9 pg/mL (SD 42.6). Normalisation of serum cobalamin concentration was seen in all patients (figure). The mean serum cobalamin concentration after completion of the short-term loading phase was 515.7 pg/mL (235.0). An increase in cobalamin concentration as much as four-fold compared with pretreatment concentration was seen in most patients. In a few patients, higher increase in cobalamin concentrations was achieved. The mean change in serum cobalamin concentration of 387.7 pg/mL (215) was significant (p=0.0001 in Student’s t test). No patient had side-effects. All participants found the method of administration convenient and preferred it to intramuscular injections.

Sublingual therapy for cobalamin deficiency as an alternative to oral and parenteral cobalamin supplementation

Georges Delpre, Pinhas Stark, Yaron Niv

Effectiveness of sublingual cobalamin-replacement therapy was studied in 18 people with cobalamin deficiency. Administration was efficacious and convenient, and compliance was high. The traditional treatment of cobalamin (vitamin B12) deficiency, including pernicious anaemia, food-cobalamin malabsorption in the elderly, vegetarism, and other deficiency states, is by intramuscular injections. However, several drawbacks are attributed to this route of administration, commonly resulting in discontinuation of therapy. Injections can be painful, are difficult in patients who have a tendency to bleed or who are very thin, are difficult to provide for patients who are elderly or disabled, and are costly if given by health professionals. Oral cobalamin-replacement therapy has, however, proved reliable and effective, but is rarely prescribed. Additionally, oral therapy is not efficient in patients with diarrhoea, vomiting, or who are otherwise unable to take or tolerate oral medication.

In a prospective open-labelled study, we treated 18 consecutive patients with cobalamin deficiency of various causes with sublingual cobalamin preparation, and assessed the efficacy of treatment. Cobalamin deficiency was defined as serum cobalamin concentration less than 200 pg/mL (normal concentration 200-900 pg/mL), shown by two consecutive tests. Ten men and eight women were enrolled. The mean age was 48.1 years (range 23-80). Five patients had pernicious anaemia, seven were vegetarians, and two had Crohn’s disease (ileitis). Four patients, all male, were long-term blood donors. No patient was anaemic. We gave patients sublingual nuggets of 1000 µg cobalamin (Solgar Laboratories, Leonia, NJ, USA). Cobalamin is isolated from yeast fermentation medium, which provides a product that is technically yeast free.

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Decrease of vancomycin-resistant enterococci in poultry meat after avoparcin ban

Annalisa Pantosti, Maria Del Grosso, Silvia Tagliabue, Agostino Macrì, Alfredo Caprioli

In Italy, 18 months after the ban of avoparcin, the percentage of poultry meat samples containing vanA gene-positive vancomycin-resistant enterococci fell from 14.6% to 8%.

Avoparcin was used as a growth promoter in food animals in most European countries, including Italy, until April, 1997, when the EU banned its use because there was increasing resistance in enterococci, isolated from both animals and human beings, to vancomycin. Avoparcin has cross-resistance with vancomycin, and therefore in the gut of animals this antibiotic can select for high-level vancomycin-resistant enterococci (VRE) carrying the transposon borne vanA gene, which can be transferred to other bacteria. VRE are detected in the faeces of animals in farms using avoparcin, but not in farms not using avoparcin, nor in farms in the USA where avoparcin has never been authorised for use in animals.

Moreover, VRE can be found in uncooked food of animal origin, especially chickens, in Europe, but not in the USA. 1, 2

Although the risk of transmission of animal VRE to human beings via the food chain has not been precisely measured, the effect of the avoparcin ban on the prevalence of VRE in animal-derived uncooked food can be evaluated. With this aim a study was carried out in Italy with the support of the Italian Ministry of Health. We examined raw poultry samples (whole carcasses and poultry cuts) obtained from food processing plants in two separate surveys: before the avoparcin ban (March, 1997) and 18 months afterwards (October, 1998). The samples were collected throughout 1 month in each survey by staff of three Regional Veterinary Laboratories (Istituti Zooprofilattici Sperimentali) in north and central Italy. VRE were isolated after enrichment in vancomycin-containing media (6 mg/L). PCR was used to detect the vanA resistance gene and to confirm the identification of the species Enterococcus faecium.

There was a lower prevalence of VRE harbouring the vanA gene in the samples collected 18 months after the ban of avoparcin: the percentage of samples containing VRE fell from 14.6% (49/334) to 8% (22/271, p=0.012). In both surveys, several vanA-positive enterococcal species were found, including E faecium, E faecalis, E durans, and E hirae. E faecium was the most common species; its prevalence decreased from 9.3% of the samples in the first survey, to 7% in the second survey, but the difference was not statistically significant.

Although further study is necessary to confirm a trend, our findings suggest that several months after the avoparcin ban, there is a moderate reduction in VRE contamination of poultry products and the consumer is less likely to come across vancomycin-resistant enterococci bearing the potentially transferable vanA gene. After the ban of tetracyclines as growth promoters in 1971, Smith did not find a reduction in the frequency of tetracycline-resistant Escherichia coli in pigs. 3 However, tetracyclines were and still are largely used as therapeutic medicines in the animal industry, whereas there is no similar use for avoparcin or other glycopeptide antibiotics.