Oscillococcinum in the prevention and cure of influenza and acute respiratory virus infection

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The search for modern preventive and curative treatment for influenza and other respiratory infections is one of today's most pressing challenges. This article describes both Russian and foreign experiments involving the use of the homeopathic remedy oscillococcinum. It has been established that oscillococcinum can prevent influenza and acute respiratory virus infection (ARVI), as evidenced by excellent epidemiological indicators. It may also be used for treating these illnesses in different sections of the population.

The search for modalities and medicinal products to treat and prevent ARVI is steadily becoming a more pressing issue with the imminent publication of information on the appearance of new influenza strains. At this time, there is no way of vaccinating against emerging etiologic agents of respiratory infection (apart from influenza vaccines). This makes both adults and children in many places vulnerable to these infections. Therefore, full attention must be paid to studying the epidemiological efficacy and application of effective modalities for the non-specific prevention of ARVI and influenza.

One way of resolving this problem is to search for preparations from different sources, including homeopathic treatments.

Oscillococcinum is a homeopathic treatment based on a lysate of the liver and heart of Barbary Duck (*Anas barbariae*), reared and dynamised according to Korsakov 200 (200K) times using Doctor Roy's method. The preparation contains excipients, notably sucrose and lactose. Oscillococcinum was registered on 14 March 2002 (Protocol No, 5, registration number P No. 014236/1-2002). It is registered with the Russian Health Ministry (approval registration P-8-242 no. 007993 dated 28 November 1996) and approved for use in Russian territory. Oscillococcinum has been known to be effective in the treatment of influenza for 50 years. The preparation consists of homeopathic granules and is produced by the French company Laboratoire Boiron.

The aim of this article was to review experience of oscillococcinum use, with illustration based on our own observations.

Work carried out by several researchers in various countries demonstrates the efficacy of the preparation in treating influenza and influenza-like conditions.

A multi-centre, randomised study (P. Kazanova, *Proposta Omeopatica* 3, Anno IV, October 1998) to investigate the efficacy of oscillococcinum in the treatment of influenza was conducted in France on 300 volunteers [1]. When the first symptoms of influenza (shivering, aching and high temperature) appeared, a group of patients took oscillococcinum for 3-4 days until the symptoms resolved. Table 1 shows details of changes in temperature and symptoms such as aching and shivering in influenza patients who took either oscillococcinum or a placebo.

Table 1. Number of patients with influenza symptoms (temperature, aching and shivering) before administration of oscillococcinum and on the fourth day of treatment

Symptom		Patients on oscillococcinum, n = 150	Patients given placebo, n = 150
Temperature	Day 1	38.4 ± 0.45	38.5 ± 0.98
	Day 4	37.3 ± 0.42	38.1 ± 1.01
Shivering	Day 1	126	132
	Day 4	97	56
Aching	Day 1	96	110
	Day 4	28	57

The data in Table 1 show that temperature was comparable in both populations before treatment but that it fell more quickly in the group given oscillococcinum in whom it had been normalised by the fourth day. Shivering, present in patients from both groups before treatment, disappeared by the fourth day in 55% and 26.5% respectively. Aching disappeared within a single day in 70% of patients in the oscillococcinum and 48% of patients on placebo.

In another masked, placebo-controlled test in Germany (P. Papp, P. Shubak, E. Bek et al., *British Homeopathic Journal* 1998; 87: 69-76), conducted between November 1990 and Spring 1991, the efficacy of influenza treatment using this preparation was assessed in 188 patients (93 women and 95 men, average age 35.1 ± 12.7) and in 184 patients (88 women and 96 men, average age 34.9 ± 12.1) given oscillococcinum [2]. The values were recorded at the beginning of treatment,

after two days and finally after 7-10 days. Twice a day, body temperature was measured, changes in nine symptoms (cough, blocked nose, muscle pain, sore throat etc.) were assessed, and a record was made of any other medicinal products used.

In this research, the authors assessed efficacy according to the following criteria. The medicine was deemed effective if the number of patients in the group taking it who lost all influenza-like symptoms exceeded the number of who recovered in placebo group, and/or if the complete recovery period was shorter when the medicine was used instead of the placebo. Side effects and compliance were evaluated in all the patients who were taking oscillococcinum. To check the accuracy of the data, the comprehensiveness and regularity with which the patients completed the forms were reviewed.

During the investigation, 21 patients were excluded from the experimental group and 17 from the control group for breaching the conditions of the test. Therefore, the condition of 167 patients was evaluated in each group.

Over the first two days, influenza symptoms regressed in 19.2% of patients taking oscillococcinum so that they were able to return to work (Table 2). On the fifth day, 26.4% of patients taking the medicine still showed some symptoms, compared with 32.3% in the placebo group. In 7-10 days after the test began, 133 patients (80.1%) in the group taking oscillococcinum treatment had no more influenza symptoms compared with 128 in the placebo group.

Table 2. Comparison of the condition of patients taking oscillococcinum and placebo (after two days)

Patients	No influenza symptoms (total/%)	Significant improvement (total/%)	Some improvement (total/%)	No improvement (total/%)	Deterioration (total/%)
Oscillococcinum	32 / 19.2	73 / 43.7	41 / 24.6	21 / 12.6	- / -
Placebo	25 / 15.0	56 / 33.5	49 / 29.3	28 / 16.8	9 / 5.4

Oscillococcinum had a positive effect on the severity of the illness. Two days after treatment started, 43.7% of patients taking oscillococcinum reported a significant improvement in health, compared with 33.5% in the placebo group. In addition, 5.4% of patients in the placebo group reported deterioration, requiring further forms of treatment.

An analysis of prescription patterns showed that more concomitant medicinal products (painkillers, expectorants, cough prevention preparations etc) were used in the placebo group than in the active oscillococcinum treatment group. The use of medicinal products increased 2.9-fold (from 13.8% to 30.3%) in the oscillococcinum group, compared with 4.2-fold (8.7% to 36.4%) in the placebo group.

The authors noted a slightly higher percentage of patients able to work in the oscillococcinum group compared with the placebo group. After two days of treatment, 16.3% and 9.2% respectively were able to work, rising to 48.9% and 46.7% after four days.

Five patients involved in this research experienced unwanted effects. According to the authors' conclusions, four of these five were unconnected with the remedy; the product may have been casual in one case of headache.

The clinical picture in this research therefore suggested that oscillococcinum treatment has positive effects with more rapid symptom regression and foreshortening of the duration of the illness.

The fact that almost one third of the patients were taking other medicinal products could indicate that this remedy may represent effective adjunctive treatment for influenza and ARVI.

Interesting results were obtained by J. K. Ferly, D. Zmiru et al. in France with data from 149 general practitioners, most of them not homeopathic specialists. This double-masked, placebo-controlled study was conducted in 478 volunteers part of 20 years of age or more.Patients with the symptoms of full-blown influenza were selected, namely a rectal temperature of over 38°C plus at least two of the following five clinical symptoms – headache, generalised ache, joint pain, lower back pain, and shivering. The first symptoms had to have appeared less than 24 hours before inclusion. The research excluded patients with immunodeficiency, those on immunosuppressants and immunostimulators, those with localised infectious foci and those not vaccinated against influenza. The patients were asked not to take any painkillers or antipyretic drugs within 48 hours of taking the oscillococcinum (and to notify their medical supervisor of this proviso). The patients were also required to report the taking of any antibiotics. The study was conducted during an influenza epidemic caused by the AH1N1 virus. Criteria for recovery were lowering of the rectal temperature to below 37.5°C and definitive disappearance of the above-mentioned symptoms defining influenza syndrome. Persistence of cough, blocked nose and weakness were not taken into account. The efficacy of the product was determined on the basis of a set of primary end points (level of recovery after 48 hours, changes

in that level over time and duration of the illness) as well as secondary criteria (taking of accompanying medicinal products, adverse reactions).

The statistical analysis was compatible with the requirements for a definitive conclusion concerning a medicinal product. The proportion of recovered patients was determined using the X2 Mantel Henzel test (Mantel, 1963). Changes of level of recovery over time were studied using the long-range test (Mantel, 1966). Means were compared using the Student test. The null hypothesis was taken as greater efficacy of the medicinal product compared with the placebo. Some adjustments were made for some parameters studied, either individually (quantitative data examination test) or using the multiple regression model.

From all the above, it can be concluded that, although testing homeopathic preparations can be complicated, rigorous research such as that conducted by Ferly in line with the requirements for demonstrating conclusive results for medicinal products can generate reliable results.

In this research, 43% of patients had marked influenza symptoms at the moment of inclusion in the test (temperature of 39°C and presence of at least three of the five determining symptoms). Of these, 58% presented all five functional symptoms.

The non-specific prevention of illnesses caused by respiratory viruses is first and foremost indicated for persons in high-risk groups which is why the search for non-specific modalities to prevent ARVI is of particular importance.

The aim of our double-masked, placebo-controlled study was to investigate the epidemiological (preventive) efficacy of the homeopathic preparation oscillococcinum against influenza and ARVI in high-risk health care workers. The research was conducted on in-patients at a health care establishment.

Using the random choice method, two groups of 50 persons each were assembled. A total of 100 patients participated in the research (Table 3).

Table 3. Results of taking oscillococcinum amongst medical workers (Moscow, 2000)

Group	Sex	Age	No. of persons becoming ill	% of persons becoming ill
Oscillococcinum (n = 50)	M = 41 F = 9	49.3 ± 11.3	1	2
Placebo (n = 50)	M = 11 F = 39	52.4 ± 10.9	6	12

All study products were encoded throughout the research. The first group was given prophylactic oscillococcinum once a week while in the second, control group, the patients were given a placebo in the same way. The preparation and the placebo were taken under the supervision of a medical worker by swallowing one tablet on the 1st, 8th, 15th and 29th days.

The population (both treated and control groups) consisted of subjects in whom influenza or ARVI syndrome had onset in the last 1-2 days in a family member or a room mate

The protective efficacy of oscillococcinum against influenza and ARVI is confirmed through excellent epidemiological efficacy indicators: the efficacy index (EI) reached 6.0 with a protection indicator (PI) of 83.1%.

We have also studied the preventive and curative efficacy of oscillococcinum against influenza and ARVI under conditions of randomised epidemiological research with double-masking and placebo control. All the medicinal products were numbered at the start of and during the research.

The research was carried out on a defined cohort of young people (n = 227; average age 18.6 ± 1.4; range 16-22 years) training in a medical institute and not vaccinated against influenza (Table 5).

Table 5. Etiology of influenza and ARVI in the cohort (according to IFA results)

ARVI-causing agent	Number (%)	
	Experimental group (n = 110)	Control group (n = 117)
Influenza virus A (H1N1)	4 (2.9 ± 0.8)	4 (3.2 ± 0.8)
Influenza virus A (H3N2)	24 (17.9 ± 2.7)	24 (19.0 ± 2.7)
Influenza virus B	14 (10.2 ± 2.6)	15 (11.9 ± 2.2)
Adenovirus	20 (14.6 ± 3.1)	20 (15.9 ± 2.8)
RS virus	17 (12.4 ± 2.8)	17 (13.5 ± 3.2)

Para-influenza virus type 1	32 (23.4 ± 4.2)	34 (27.0 ± 3.2)
Para-influenza virus type 3	13 (9.5 ± 2.2)	11 (8.7 ± 1.5)

In accordance with the research objectives, subjects were randomised into two groups (of 110 and 117 subjects respectively) and assigned the following medicinal products:
- Group 1: oscillococcinum, 1 dose (1 tablet) once a week for four weeks, orally.
- Group 2: placebo (control group) according to the same pattern.

With the aim of assessing the effect of the medicinal product on humoral immunity, serological tests based on an immunofluorescent assay (IFA) were carried out to detect virus-specific antibodies: H1N1 and H3N2, B respiratory-syncytial (RS) virus, adenovirus, and types 1 and 3 of para-influenza virus. Results were recorded at baseline (first test, prior to administration of the preparation) and again three months later (second test). In the test systems used, the main components are respiratory virus antigens adsorbed on to the surface of the wells of polystyrene plates, and monoclonal antibody conjugates against human immunoglobulin (produced by the NII RAMI Group and the OOO Diagnostic Preparation Production Company of St Petersburg).

All quantitative markers were analysed using appropriate statistical methods. The significance of differences was tested using Student's t test, ($p < 0.05$).

Oscillococcinum attenuated onset indicators for influenza and ARVI more than placebo. Comparative data on the incidence of pathology in medical workers during the 2004-5 season (December 2004 to February 2005) are shown in Table 4.

Table 4. Incidence of influenza and ARVI in workers at Kaluga Medical Institute taking oscillococcinum without any other prophylactic medicinal product

	Experimental group (n = 110)			Control group (n = 117)		
No. of episodes of illness	22	11	11	38	13	25
% of persons becoming ill	20.0 ± 2.6	10.0 ± 1.3	10.0 ± 1.8	32.5 ± 4.4	11.1 ± 2.1	21.4 ± 2.7
Level of illness, 1,000 workers	200	100	100	325	111	214

The data show a slight rise in incidence of illness in those with influenza and ARVI, although a comparison of the indicators for incidence of respiratory infection shows that it is 1.62 times lower in the experimental group containing subjects who were being treated with oscillococcinum (20.0 ± 2.6%) than in the control group (32.5 ± 4.4%, $p < 0.05$). It is worth noting that in the first group, 11 people (50%) became ill while taking the medicinal product and that after the end of the treatment period, 11 again fell sick (50%); in the same periods, 13 (34.2%) and 25 (65.8%) respectively fell ill in the second group. This indicates that oscillococcinum has a protective effect.

An analysis of the etiology of influenza and ARVI (on the basis of IFA results) amongst the participants shows that all the causative agents covered in the research were circulating in both the experimental group and the control group at the same time. Meanwhile, the importance of individual infectious agents in the etiology of ARVI varied (Table 4).

The most common etiologic agents in both experimental and control groups were para-influenza virus type 1 (23.4 ± 4.2 and 27.0 ± 3.2%), influenza A virus (H3N2) (17.9 ± 4.7 and 19.0 ± 2.7%), adenovirus (14.6 ± 3.1 and 15.9 ± 2.8%) and RS virus (12.4 ± 2.8 and 13.5 ± 3.2%). It is possible that the excessively low participation index in the overall incidence of respiratory infection with influenza virus A (H3N2) was caused by the low-intensity ofthe influenza epidemic of 1999-2000 due to circulation of the drift-variant of A/Sidney/05/97 (H3N2) and the related reference virus A/Moscow/10/99 (H3N2) according to NII RAMI Influenza Institute data). More rarely encountered are influenza virus A (H1N1) (2.9 ± 0.8 and 3.2 ± 0.8%), influenza virus B (10.2 ± 2.6 and 11.9 ± 2.2%) and para-influenza virus type 3 (9.5 ± 2.2 and 8.7 ± 1.5%). Of significance is the fact that in the control group, the involvement of all the causative agents (except for para-influenza type 3 virus) in the onset of the illness was higher than in the experimental groups.

Simultaneous diagnostic determination of antibody titres against two or more infectious agents was noted in 60.6 ± 9.1% (experimental group) and 73.2 ± 6.3% of cases (control group).

The specific weight of separate agents working in association was irregular and depended on the intensity of their circulation during the research period. The commonest “partners” in the onset of mixed infections in both the experimental and control groups were para-influenza type 1 virus (27.8 ± 5.5 and 25.6 ± 4.1%) and adenovirus (18.8 ± 3.6 and 18.4 ±

2.3%). Influenza virus A (H3N2) (9.5 ± 2.6 and 10.3 ± 1.7%) and para-influenza type 3 virus (6.9 ± 2.6 and 7.8 ± 1.2%) were often found together (see Table 5).

A study of the effect of taking oscillococcinum on the levels of specific antibodies and the dynamics of their production did not show any statistically reliable difference between the experimental group and the control group. Similar antibody levels were detected in the subjects' blood, with variations depending on the viruses circulating in the community. It is not therefore possible to reach any conclusion as to how the preparation might affect the level of specific antibodies elicited by ARVI -causing agents in the treated subjects.

No adverse reactions were reported during the research. The complaints reported by a small number of subjects were typical clinical symptoms of ARVI and were evidently connected with the infection.

Conclusion

* Oscillococcinum is effective in the prevention of influenza and ARVI, and is also effective in treatment. Taking oscillococcinum provides protection, as evidenced by excellent epidemiological efficacy indicators.
* The easy-to-use presentation and simple posology of oscillococcinum makes it suitable for mass prevention of ARVI and influenza in many segments of the population.
* Oscillococcinum does not induce any side effects or adverse reactions.

References

1 Kazanova P. Proposta omeopatica 3. Year IV, October 1998
2 Papp P., Shubak P., Bek E. et al. British Homeopathic Journal 1998: 87: 69-76