Fungicidal effects of homoeopathic medicines versus allopathic ketoconazole in Candida albicans

Brandy Garrett Kluthe  
_Saint Peter’s University, Jersey City, New Jersey, United States_, bgarrettkluthe@saintpeters.edu

Chiara X. Mercado  
_New York College of Podiatric Medicine, New York, United States_, chiaramercado98@gmail.com

Follow this and additional works at: https://ijrh.researchcommons.org/journal

Recommended Citation
Fungicidal effects of homoeopathic medicines versus allopathic ketoconazole in Candida albicans

Abstract
Background: Candida albicans, accounts for more than 75% of all Candidal infections. Apart from its growing prevalence, it is also one of the most resistant strains against antifungal medication. Homoeopathy is an alternative to allopathic medication and has shown inhibiting fungal growth. Objective: This study was to determine effectiveness of homoeopathic tinctures and medications versus allopathic Ketoconazole in growth inhibition and fungicidal properties against in vitro cultures of C. albicans. Materials and Methods: Efficacy of five antifungal agents were tested for inhibiting fungal growth and their fungicidal properties on cultured C. albicans the agents tested were Eucalyptus globulus and Ocimum basilicum in essential oil form, Benzoicum Acidum 30C and Kali Iodatum 30C in tablet form, and compared with the effect of 100 mg Ketoconazole in powder form. Results: In the growth inhibition trial, O. basilicum had the largest zone of inhibition followed by E. globulus following. The ketoconazole group showed similar inhibition rates with Benzoicum Acidum 30C, and Kali Iodatum 30C showed more inhibition than Ketoconazole. The present data suggests that no individual agent had an effective fungicidal effect on C. albicans, only causing a minimal reduction on the surface in the fungal colony. Conclusion: Results indicate that essential oils O. basilicum and E. globulus were most effective in growth inhibition. However, both essential oil and homoeopathic treatment had limited fungicidal properties. This concludes that homoeopathic alternatives can be effective in preventing fungal infections but may be less effective in treatment of a fully developed C. albicans infection.

Acknowledgments and Source of Funding
Nil.
**Fungicidal effects of homoeopathic medicines versus allopatic ketoconazole in Candida albicans**

Chiara X Mercado¹, Brandy Garrett Kluthe²

¹New York College of Podiatric Medicine, New York, United States, ²Saint Peter’s University, Jersey City, New Jersey, United States

**Abstract**

**Background:** *Candida albicans*, accounts for more than 75% of all Candidal infections. Apart from its growing prevalence, it is also one of the most resistant strains against antifungal medication. Homoeopathy is an alternative to allopathic medication and has shown inhibiting fungal growth. **Objective:** This study was to determine effectiveness of homoeopathic tinctures and medications versus allopathic Ketoconazole in growth inhibition and fungicidal properties against *in vitro* cultures of *C. albicans*. **Materials and Methods:** Efficacy of five antifungal agents were tested for inhibiting fungal growth and their fungicidal properties on cultured *C. albicans* the agents tested were *Eucalyptus globulus* and *Ocimum basilicum* in essential oil form, *Benzoic Acidum* 30C and *Kali Iodatum* 30C in tablet form, and compared with the effect of 100 mg Ketoconazole in powder form. **Results:** In the growth inhibition trial, *O. basilicum* had the largest zone of inhibition followed by *E. globulus* following. The ketoconazole group showed similar inhibition rates with *Benzoic Acidum* 30C, and *Kali Iodatum* 30C showed more inhibition than Ketoconazole. The present data suggests that no individual agent had an effective fungicidal effect on *C. albicans*, only causing a minimal reduction on the surface in the fungal colony. **Conclusion:** Results indicate that essential oils *O. basilicum* and *E. globulus* were most effective in growth inhibition. However, both essential oil and homoeopathic treatment had limited fungicidal properties. This concludes that homoeopathic alternatives can be effective in preventing fungal infections but may be less effective in treatment of a fully developed *C. albicans* infection.

**Keywords:** Antifungal, *Candida albicans*, Essential oils, Fungicidal properties, *In vitro* inhibition

**Introduction**

Over one billion people have been impacted by fungal infections with various clinical manifestations, affecting hair, nails, and skin among other types.¹ These infections can pose a threat by causing damage to organs.¹ It has been reported that fungal disease mortality is similar to that of tuberculosis and is 3 times the malaria mortality.¹ The rise of fungal infections in immunocompromised patients is a significant factor for the mortality of these cases, along with the acquired resistance of fungi to allopathic treatment.²

The severity of the infection varies by the fungi identified; some are mucocutaneous which target the mucosal membrane of the epidermis, and the other systemic fungi are life-threatening to immunosuppressed patients.³⁴ Severe infections include invasive candidiasis, histoplasmosis, and aspergillosis which affect those with weakened immune systems by attacking blood flow and lung function.¹ Immunocompromised patients are most susceptible, and at risk for fungal infection, these include patients suffering from AIDS, chemotherapy treatments, cystic fibrosis, and diabetes.⁴ The number of estimated Candidal infections resulting in invasive candidiasis seems to be growing each year. Candidiasis is one of the most prominent forms of fungal disease, and also harbors a strain of the most anti-fungal resistant fungi: *Candida albicans*.³⁵ There have been some studies conducted on Candidal infections obtained from human patients suffering from oral and vaginal candidiasis and the effects of homoeopathic treatment.³⁶ Studies show that recurrent vulvovaginal candidiasis affects 75% of women

**Quick Response Code:**

*Address for correspondence:* Dr. Brandy Garrett Kluthe, Saint Peter’s University, Jersey City, New Jersey, United States. E-mail: bgarrettkluthe@saintpeters.edu

Received: 05 October 2020; Published: 29 December 2021

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:**

How to cite this article: Mercado CX, Kluthe BG. Fungicidal effects of homoeopathic medicines versus allopatic ketoconazole in *Candida albicans*. Indian J Res Homoeopathy 2021;15(4):229-236.
at least once and is recurrent in 5-8% of women in prime reproductive years.\[9\] The most common strain responsible for vulvovaginal candidiasis is \textit{C. albicans}.\[6\]

A previous randomized trial of an oral regimen of fluconazole, a well-known conventional antifungal medication, showed a 50% relapse rate in patients after cessation of treatment.\[6\] Azole antifungals like the aforementioned Fluconazole are the primary treatment for several \textit{Candida} infections; however, there are several studies and documentation of intrinsic and acquired resistance to azole antifungals among the \textit{Candida} genus.\[7\] Current antifungal drug limitations paired with the increased occurrence of systemic fungal infections and rapidly developed fungal resistance have raised awareness of the need of new drugs with novel mechanisms.\[4\] It has been demonstrated that although nosocomial Candidiasis can behave such as minor epidemics with selection of virulent strains, and it is usually the commensal organisms of the body that are the initial infection source.\[5\] Usually, \textit{Candida} can live as a commensal organism in the body, being restricted from overgrowth by the hosts microflora, but when this microflora is disturbed such as the cases in antimicrobial or antifungal therapy there can be an increase in growth in the body.\[5\] This same study found that a select amount of homoeopathic drugs exhibited inhibitory properties on \textit{C. albicans} comparable to ketoconazole.\[5\]

This shows that although allopathic treatment still holds the maximum inhibition rate, homoeopathic drugs such as \textit{Acidum Benzoicum} and \textit{Kali Iodatum} 30C are comparable and effective in eradicating the fungal infection as well as inhibiting growth without risking development of resistance in the fungal strain.

Leading factors in raised incidences of fungal infections include excessive use of antimicrobial agents, immune system defects, and diseases that affect the human immune system.\[9\]

Due to the recent rise in acquired drug resistance in fungal infections, researchers have been looking into alternatives for traditional allopathic -azole antifungal treatments such as peptide-based,\[2\] and plant-derived essential oil-based such as \textit{Eucalyptus globulus} and \textit{Ocimum basilicum}.\[9,10\]

The utilization of natural sources and treatments has been imperative in developing new active molecules with unique chemical skeletons and bioactivities.\[4\] There has been a considerable amount of success and advancement in the use of peptide-based antifungal therapy found in both plant and animal kingdoms.\[3\] These studies conducted on natural sources have resulted in the discovery of potent antifungals found in nature such as plants, marine products, and microorganisms.\[4\]

The use of plant-derived essential oils such as \textit{E. globulus} and \textit{O. basilicum} is growing in antifungal treatment. The fungicidal properties found in \textit{Basil} (\textit{O. basilicum}) oil have been studied \textit{in vitro} and showed that two chemotypes found in the essential oil link to its antifungal properties.\[10\] The chemotypes methyl chavicol and linalol were found to be equally effective in the same amount of quantity administered, reducing fungal growth by 78% 4 days post-inoculation.\[10\]

\textit{E. globulus} is a well-studied oil that shows fungicidal properties and is used in the treatment of other existing conditions such as diabetes mellitus.\[11\] In a study on normal and diabetic rats, the antifungal properties of \textit{E. globulus} essential oil were tested using sixty normoglycemic male rats randomly divided into six groups.\[11\] Overall, the study found that essential oil administration accounted for a reduction of hyperglycemia, polydipsia, polyphagia, and \textit{Candidal} infection in the liver and kidneys.\[11\] Past research focused on a different species of \textit{Eucalyptus} but bore similar effects as the previously mentioned study. It tested the effects of \textit{Eucalyptus gomphocephala} on microbial infection, and looked at the epidemiology and toxicity.\[9\] The research concluded that \textit{E. gomphocephala} bore a significant amount of inhibitory properties on microbial agents.\[9\] Another study looked at the chemical composition of eight \textit{Eucalyptus} species harvested from various parts of Tunisia and their antimicrobial, antifungal, and antiviral activities.\[12\]

These studies provide precedence for a safer form of treatment than traditional oral and topical fungal treatments which can affect the liver and other organ systems. In addition, homoeopathic treatment and alternatives have been proven to be more cost-effective than traditional allopathic treatment, which is imperative with patient care to enable access to medical treatment.\[10\] This study expanded on previous studies of individual focus on homoeopathic alternatives and explored both the inhibitory growth rates and fungicidal effects on singular treatments between allopathic and homoeopathic medicine. It is hypothesized that essential oil and homoeopathic mother tincture treatments will exhibit measurable fungicidal effects that are equal to or greater than allopathic treatment on an existing \textit{C. albicans} infection. In addition, it is hypothesized that homoeopathic and mother tincture treatments will have a measurable growth inhibitory effect on the \textit{C. albicans} colony, aiding in preventative measures against fungal infections.

\section*{Materials and Methods}

\subsection*{Model organism care and culturing}

\textit{C. albicans} was used as the model organism and was acquired from a commercial supplier (Carolina Biological Supply Company, Burlington, NC, # 155965). Sabouraud dextrose broth (SDB) (Sigma Aldrich, Saint Louis, MO, #S3306) was made for culturing \textit{C. albicans} using Sigma-Aldrich protocol in a sterile hood. The fungal stock was added using an inoculating loop and swirled into the SDB Flask. The inoculated flask was incubated at 25 degrees for 7 days. Sabouraud dextrose agar (SDA) plates were prepared for running the experiments.

\subsection*{Growth inhibition}

An individual analysis of each antifungal agent tested was conducted, including \textit{E. globulus} and \textit{O. basilicum} in essential oil form, \textit{Benzoic Acidum 30C} and \textit{Kali Iodatum} 30C in paste form, and 100 mg Ketoconazole in paste form.
Trial 1
The five agents were turned into an aqueous solution that was used to soak diffusion discs for 30 min. *Benzoicum Acidum 30C* and *Kali Iodatum 30C* were obtained in pellet/solid form were crushed using a mortar and pestle until completely pulverized, and then 1 mL of distilled water was added and mixed into a solution with a concentration of approximately 1 CFU/mL McFarland opacity concentration.[14] Ketoconazole was acquired in powder form, so therefore it was measured out to 0.25 g and 300 uL of water was applied to create a solution. *E. globulus* and *O. basilicum* essential oils were acquired in aqueous form so 50 uL were simply pipetted out onto a weighing boat. One mL of the inoculated SDB broth was pipetted onto each of the prepared SDA plates and spread with an L spreader. The soaked discs were placed in the middle of the SDA plate and then the plate was turned. This was repeated for all 50 individual plates, 10 for each agent.

**Fungicidal effect**
All five agents were tested for their fungicidal efficacy on cultured *C. albicans*. with two different methods one with disc diffusion and another with pipetting the agent solution directly onto the cultured SDA. Concentrations of solutions were made using the same method and protocol as the agents used in the growth inhibition treatment, solutions were approximately 1 CFU/mL McFarland opacity concentration.[14] For both protocols, 1 mL of the cultured SDB broth was added to the SDA plates. The plates were incubated at 25°C for 7 days to ensure optimal growth. This experiment was completed over approximately a month-long period.

**Pipetting solution**
Concentration solutions were prepared for each of the five agents. Then, 50 uL of each respective solution was pipetted onto the center of the SDA plate, and then the plate was flipped. They were then covered with parafilm to seal the plate and reduce risk of contamination. Plates were stored in a 25°C incubator for 7 days, being monitored 2 days after the start of the trial. It was noted that some diffusion discs had dislodged and measurements were recorded 2 days after the start of the trial. It was observed that some diffusion discs had dislodged and were in other locations besides the initial center of the SDA plate [Figure 3]. *Benzoicum Acidum 30C* and *Kali Iodatum 30C* did not show any results after 1 day. *E. globulus* also began to show a zone of inhibition, with a very clear area of inhibition, unlike *O. basilicum* [Figure 3]. *Benzoicum Acidum* and *Kali Iodatum 30C* did not show any results after 1 day. Observations and measurements were recorded 2 days after the start of the trial. It was noted that some diffusion discs had dislodged and were in other locations besides the initial center of the SDA plate [Figure 3]. *Benzoicum Acidum 30C* and *Kali Iodatum 30C* had shown inhibition after 2 days of testing, with *Benzoicum Acidum* showing more inhibition. *E. globulus* showed high inhibition zones, following behind *O. basilicum* which showed the largest zone of inhibition. Ketoconazole showed approximately the same results as *Benzoicum Acidum 30C* and *Kali Iodatum 30C*.

**Disc diffusion**
The same solution concentrations were prepared for this protocol as in the pipetting solution. They were mixed thoroughly and then 10 diffusion discs were soaked in each agent solution for 15 min. Using sterile tweezers, each disc was placed directly in the middle of each SDA plate on top of the fungal growth. Plates were then stored upside down in a 25°C incubator for 7 days. Observations and measurements were taken 2, 5, and 7 days post-treatment. Treatment was started again using the diffusion disc method being mounted on top of the already treated SDA plates, observations were taken again after 1, 2, 3, 6, and 7 days post-treatment. The plates were moved to room temperature storage from day 3 to day 7 post-treatment.

**Data collection and analysis**
Qualitative and quantitative data were collected. The qualitative assay of this experiment was measured by visual observation of the eradication of fungal colonies in the trials. Colonies of *C. albicans* were measured at the start of trial and then re-measured 2 days post-treatment. Quantitative data were collected by measuring size of fungal colonies using a vernier caliper and then analyzed using analysis of variance statistical analysis.[15]

All measurements were taken in diameter \( \times \) diameter, not excluding the diffusion disc which has a measurement of 5 mm \( \times \) 5 mm (diameter \( \times \) diameter). After the initial start of treatment when discs were applied simultaneously to the Sabaroud Dextrose Broth, measurements were taken the following day to provide details as to how the experiment was running.

**Results**

**Growth inhibition**
It was observed that *O. basilicum* showed a reaction with the fungi within 1 h and it had already begun to inhibit growth in large quantities, compared to other agents [Figure 1]. However, *O. basilicum* had a cloudy zone of inhibition [Figure 2]. During treatment setup it was recorded that on multiple incidents, *O. basilicum* showed corrosive properties to plastic, often corroding through plastic containers. It was also observed that ketoconazole did not harbor any results after 1 day. *E. globulus* also began to show a zone of inhibition, with a very clear area of inhibition, unlike *O. basilicum* [Figure 3]. *Benzoicum Acidum* and *Kali Iodatum 30C* did not show any results after 1 day. Observations and measurements were recorded 2 days after the start of the trial. It was noted that some diffusion discs had dislodged and were in other locations besides the initial center of the SDA plate. *Benzoicum Acidum 30C* and *Kali Iodatum 30C* had shown inhibition after 2 days of testing, with *Benzoicum Acidum* showing more inhibition. *E. globulus* showed high inhibition zones, following behind *O. basilicum* which showed the largest zone of inhibition. Ketoconazole showed approximately the same results as *Benzoicum Acidum 30C* and *Kali Iodatum 30C*.

![Figure 1: Growth Inhibition Zone](image)

*Figure 1: Growth Inhibition Zone* The effect of each treatment’s growth inhibitory properties was a measurement of the inhibition zone after 2 days of treatment in the agent solutions on the SDA plate. The diffusion disc measurement was 5mm and each separate treatment consisted of *Benzoicum Acidum*, *Eucalyptus globulus*, *Kali Iodatum 30C*, Ketoconazole, and *Ocimum basilicum* on *C. albicans*. Ketoconazole is used as positive control. The p-value is < .00001. The result is significant at p < .05.
Fungicidal effect
This experiment tested efficacy of all 5 agents efficacy in treating an already present fungal infection [Figure 4]. Observations were recorded 1 day after application of agents. *Kali Iodatum 30C*, *Benzoicum Acidum*, and Ketoconazole had a slight zone of impact; that is, there were only slight indentations in the fungal colony [Figure 2]. *E. globulus* and *O. basilicum* showed no inhibition [Figure 2], but *O. basilicum* showed corrosive properties that fused petri plates together, making it impossible to open up the plate for closer inspection. *O. basilicum* plates showed no inhibition but they did show an oily residue on the surface of the fungal colony that reflected light [Figure 2]. All agents showed no changes in fungicidal properties or decrease in size of fungal colonies. There was no change noted for any of the days observed in the repeated treatment. After being moved to room temperature also there were no results or changes observed.

Discussion
Growth inhibition
Results showed that the growth inhibitory properties of all agents used are valid, but some are more effective in inhibiting fungal growth than others. Results were noticed after only 1 day of disc application which accounts for the preventative properties of these agents. It was thought that the ketoconazole would have the most effective inhibitory characteristic and prevent growth altogether due to its use as an allopathic treatment in already cultured fungal infections. However, ketoconazole did not have either the largest nor clearest zone of inhibition. Similarly, *Benzoicum Acidum 30C* and *Kali Iodatum 30C* did not yield the most effective inhibitory properties, although it was thought that because they are a homoeopathic “drug” they would be clinically more efficient in preventing fungal growth. However, *Benzoicum Acidum* yielded the least results with the smallest zone of inhibition.

![Figure 2: Fungicidal treatments using Ocimum basilicum and Benzoicum Acidum. Figures showing the lack of fungicidal treatment zone after multiple days post treatment, under pipetting method. Figure 4A: cloudiness is attributed to the O. basilicum corroding plastic of SDA plate. In figure 4B a Vernier caliper is used to mark indentations on fungal colonies after B. Acidum application.](image)

![Figure 3: Growth inhibition experiment on SDA plates with cultured Candida albicans. Images show the results of the diffusion discs soaked in the different concentrations. Image A shows the results of ketoconazole. Image B shows the results of Kali Iodatum. Image C shows the results of Benzoicum Acidum. Image D shows the results of Eucalyptus globulus. Image E shows the results of Ocimum basilicum.](image)
and Kali iodatum 30C showed similar results with a small inhibition zone slightly larger than Benzoicum Acidum. The agents that excelled in this treatment were the essential oils derived from E. globulus and O. basilicum. O. basilicum had the largest inhibition zone by far, and in some cases the fungal growth was very miniscule and sparsely located throughout the rim of the petri dish. These results correlate well with the observations taken during the application phase, where O. basilicum was found to have corrosive properties, thus meaning that this was a harsh essential oil that could easily corrode plastic and should be able to inhibit fungal growth. Although O. basilicum had the largest zone of inhibition, it did not have the clearest. The clearest inhibition zone belonged to the E. globulus SDA plates, that were the 2nd largest zones and they showed absolutely no fungal growth or colonies inside their inhibition zone. Results indicate that the proposed hypothesis is accepted, and homoeopathic drugs and tinctures are efficient in inhibiting fungal growth. One must consider that the essential oils used in this study may disperse throughout the agar plate and lead to challenges in identifying clear inhibitory zones. Measurement therefore a combination may result in a more efficient treatment. Furthermore, a revision of the fungicidal methods of application, where not even homoeopathic drugs showed an effective treatment. The allopathic agent used also did not rear successful results, which calls for a re-evaluation and adjustment of protocol. The findings were consistent with previous research done on homoeopathic drugs Kali iodatum 30C which showed more growth inhibition than Benzoicum Acidum 30C.[13] However, that study did not include mother tinctures; therefore, the results of this study vary so as to include those agents. E. globulus was found to have a larger zone of inhibition than that of O. basilicum in past research, but that is not consistent with the data compiled in this experiment.[16]

**Conclusion**

Future research should include assessing the components of E. globulus and O. basilicum and attempt combination treatment for the most effective results. E. globulus was found to have a clearer zone of inhibition, but O. basilicum had the largest measurement therefore a combination may result in a more efficient treatment. Furthermore, a revision of the fungicidal treatment protocol is needed to provide more results and data. It may be possible that one dose of the medication is not sufficient to combat an already cultured and developed fungal colony.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

None declared.

**REFERENCES**


**Figure 4:** Fungicidal efficacy. The effect of each treatment’s fungicidal properties of Benzoicum acidum 30C, Eucalyptus globulus, Kali iodatum 30C, Ketoconazole, and Ocimum basilicum on Candida albicans. Ketoconazole is used as positive control. The P < 0.0001. The result is significant at P < 0.05.
Mercado et al.: Homoeopathic alternatives versus allopathic treatments on Candida albicans

Indian Journal of Research in Homoeopathy ¦ Volume 15 ¦ Issue 4 ¦ Oct-Dec 2021

Efectos fungicidas de los medicamentos homeopáticos versus ketoconazol allopático en Candida albicans

Fondo: Candida albicans, representa más del 75% de todas las infecciones por Candida. Aparte de su creciente prevalencia, también es una de las cepas más resistentes a los medicamentos antifúngicos. La homeopatía es una alternativa a la medicación allopática y ha demostrado inhibir el crecimiento de hongos. Objetivo: El propósito de este estudio fue para determinar la efectividad de los tinturas y medicamentos homeopáticos versus el ketoconazol allopático en la inhibición del crecimiento y las propiedades fungicidas contra cultivos in vitro de C. albicans. Materiales y métodos: Se probó la eficacia de cinco agentes antifúngicos para inhibir el crecimiento de hongos y sus propiedades fungicidas en C. albicans cultivados. Los agentes probados fueron Eucalyptus globulus y Ocimum basilicum en forma de aceite esencial, Benzoicum Acidum 30C y Kali Iodatum 30C en forma de tableta, y se comparó con el efecto de 100 mg de ketoconazol en forma de polvo. Resultados: En el ensayo de inhibición del crecimiento, O. basilicum tuvo la mayor zona de inhibición seguida por E. globulus. El grupo de ketoconazol mostró tasas de inhibición similares con Benzoicum Acidum 30C, y Kali Iodatum 30C mostró más inhibición que el ketoconazol. Los datos actuales sugieren que ningún agente individual tuvo un efecto fungicida efectivo sobre C. albicans, causando solo una reducción mínima en la superficie de la colonia de hongos. Conclusiones: Los resultados indican que los aceites esenciales O. basilicum y E. globulus fueron más efectivos en la inhibición del crecimiento. Sin embargo, tanto el aceite esencial como el tratamiento homeopático tenían propiedades fungicidas limitadas. Esto concluye que las alternativas homeopáticas pueden ser efectivas para prevenir las infecciones por hongos, pero pueden ser menos efectivas en el tratamiento de una infección por C. albicans completamente desarrollada.

Fungizide Wirkung von homöopathischen Arzneimitteln gegenüber allopäthischem Ketoconazol bei Candida albicans

Effets fongicides des médicaments homéopathiques par rapport au kétoconazole allopathique sur Candida albicans

**Contexte:** Candida albicans, représente plus de 75% de toutes les infections à Candida. Outre sa prévalence croissante, c’est également l’une des souches les plus résistantes aux médicaments antifongiques. L’homéopathie est une alternative aux médicaments allopathiques et a montré qu’elle inhibait la croissance fongique. **Objectif:** Cette étude visait à déterminer l’efficacité des teintures et des médicaments homéopathiques par rapport au Kétoconazole allopathique en termes d’inhibition de la croissance et de propriétés fongicides contre les cultures in vitro de C. albicans. **Matériaux et méthodes:** L’efficacité de cinq agents antifongiques a été testée pour inhiber la croissance fongique et leurs propriétés fongicides sur la culture de C. albicans ; les agents testés étaient Eucalyptus globulus et Ocimum basilicum sous forme d’huile essentielle, Benzoicum Acidum 30C et Kali Iodatum 30C sous forme de comprimés, et comparés à l’effet de 100 mg de Kétoconazole sous forme de poudre. **Résultats:** Dans l’essai d’inhibition de la croissance, O. basilicum présentait la plus grande zone d’inhibition, suivi de E. globulus. Le groupe kétoconazole a montré des taux d’inhibition similaires avec Benzoicum Acidum 30C, et Kali Iodatum 30C a montré plus d’inhibition que le kétoconazole. Les données actuelles suggèrent qu’aucun agent individuel n’a eu un effet fongicide efficace sur C. albicans, ne provoquant qu’une réduction minimale de la surface de la colonie fongique. **Conclusion :** Les résultats indiquent que les huiles essentielles O. basilicum et E. globulus étaient les plus efficaces dans l’inhibition de la croissance. Cependant, tant les huiles essentielles que le traitement homéopathique avaient des propriétés fongicides limitées. Ceci conclut que les alternatives homéopathiques peuvent être efficaces dans la prévention des infections fongiques mais peuvent être moins efficaces dans le traitement d’une infection C. albicans pleinement développée.
कैंप्डिया एल्बिकस में एलोपीथिक कीटोकोकॉनजोल की तुलना में द्विभासित दवाओं के फंगीसाइडल प्रभाव

पूर्वायोगिता: कैंप्डिया एल्बिकस, सभी कैंप्डिया संक्रमणों में से 75 प्रतिशत के लिए जिम्मेदार होता है। इसकी बढ़ती हुई मौजूदगी के अतिरिक्त, यह एंटीजैंकन्टर दवा के बिना अत्यधिक प्रतिरोधी ट्रांसफ़ निष्कर्ष सतह में एक है। एलोपीथिक दवा का एक विनियम होमोपीथिक है और इसमें फंगल का अंतर्गती विकास दर्शाया है। उद्देश्य: इस अध्ययन का उद्देश्य सी.एल्बिकस के विनियम कल्चर के बिना फंगीसाइडल विभेदितता तथा अवरोधन विकास में एलोपीथिक कीटोकोकॉनजोल के बजाय होमोपीथिक अपमिश्रणों तथा दवाओं की प्रभावित की स्निधानरत करना था। सामग्री एवं प्रणालियों: कल्चर सी. अल्बिकस पर उनके फंगीसाइडल लक्षणों एवं अंतर्गती फंगल विकास हेतु पांच एंटीजैंकन्टर कर्मकां श्रेणी की प्रभावोद्योगक्रमज राखी गई थी। जो कर्मकां जांचे गए थे वे इस प्रकार हैं: तालिका 1 में लिप्टिस्स ग्लोबुलस एवं ओवैडंगरिमलिमक, टेक्टिक रूप में बेंजोइडेम एमिडम 30 सी एवं काँजी आयोडेम 30 सी, तथा पाउडर रूप में 100 एमिजी कीटोकोकॉनजोल प्रभाव के साथ तुलना की गई थी। परिणाम: अंतर्गती विकास परीक्षण में, ओ.वेसिलिमिक के बाद अंतर्गती ए.ग्लोबुलस एवं कार्बनीक क्रेट सबसे बड़ा था। कीटोकोकॉनजोल सभी ने बेंजोइडेम एमिडम 30सी के साथ समान अंतर्गती दरें दर्शाई थीं, तथा कांजी आयोडेम 30सी ने किटोकोकॉनजोल के नुकसान ज्यादा अंतर्गतिता दर्शाई थी। मौजूदा अंतर्गती सुझाते हैं कि किसी और विनियम कर्मकां श्रेणी.अल्बिकस पर कई प्रभावी फंगीसाइडल प्रभाव नहीं हैं, और बढ़ केवल फंगल कांजी ने सतह पर खोजा बहुत न्यूनीकरण कर रहा है। निष्कर्ष: परिणाम दर्शाते हैं कि ओ.वेसिलिमिक एवं ए.ग्लोबुलस जैसे आयोडेम तथा अंतर्गती विकास में सबसे प्रभावी थे। हालांकि, दोनों आयोडेम और एलोपीथिक उपचार के समितियाँ फंगीसाइडल लक्षण हैं। अतः यह निष्कर्ष निकालता है कि फंगल संक्रमणों की रोकथाम में होमोपीथिक विनियम प्रभावी हो सकते हैं। मगर पूर्णतः विकसित सी.अल्बिकस संक्रमण के उपचार में शायद कम प्रभावी हैं।