Rasayana Drugs Promise Better Anti-Covid-19 Medications

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ABSTRACT

COVID-19 virus is a worldwide tragedy. The western research endeavors are trying to find out an effective medication against this virus. The rasayana drugs promise rewarding medications. Their phytochemicals were studied with scientific rationality against COVID-19 virus.

Keywords: COVID-19, Phytochemical, Rasayana drug, Viral entry blocker.

INTRODUCTION

COVID-19 pandemic is global tragedy. An extraordinary research endeavors around the world is searching anti-COVID-19 drugs. The western attempts are focused on monoclonal antibodies for vaccine development and repurposing drugs. Rasayana drugs1-4 of Indian ayurvedic heritage have antiviral phytochemicals to combat this virus. The key protein targets of SARS-COVID-25-7 are surface glycoprotein (6VSB) responsible for viral attachment and entry and RNA dependent RNA polymerase, responsible for viral replication. Rasayana phytochemicals have superior binding efficacy than standard drugs Remdesvir, Lopinavir and Ritonivir. The revival of rasayana formulations1-4 is indispensable in management of COVID-19 virus.

THEORETICAL METHODOLOGY

Rasayana drugs are composed of rasayana herbs8, used in the traditional therapy.9 They are amalgam of ayurvedicophoricphytochemicals, thereby homostatis of biological humors is maintained eg. Triphalarasayana.Chyawanprashrasayana, Shilajit rasayana, Amritaprasham, Ashwaganda rasayana, Brahma rasayana and Narasimha rasayana. The selection of anti-COVID-19 ayurvedicophoric herbs10 was based on their anti-inflammatory, bronchodilatory, anti-oxidative and immune boosting activities. They are Tinospora cordifolia, Withaniasomnifera, Ocium santum, Emblica officinalis.

The notable anti-COVID-19 phytochemicals of these rasayana herbs are – Methyl eugenol, Oleanolic acid, Ursolic acid11, Withanone12, Withanolides13, Tinocordiside14. Possibly they restore pulmonary health by improving endothelial dysfunction and reducing oxidative stress.

Metyleugenol is allylueratrol (methyl ester of eugenol). The Oleanolic and Ursolic acids are pentacyclictripenoides. Withanone is secondary metabolite of steroidal oxidation and it is steroidal lactone. Withanolides are steroidal macrolides, having 6-memberd α, β unsaturated lactone and epoxy function between C5 and C6. Tinocordiside is cadinanesesquiterpene. Chemically steroidal and terpenoidal structures are virologically important.

The phytochemicals of Tulsi11 and Neem targeted surface spike glycoprotein14-15 and very recently studied through molecular docking to calculate binding affinities and inhibitory concentrations.
Methyleugenol, Oleanolic acid, and Urosolic acids were found to be good antivirals and their reported data is given in table one:

<table>
<thead>
<tr>
<th>Phytochemical</th>
<th>Binding affinity (Kcal/mol)</th>
<th>IC₅₀ (μM)</th>
</tr>
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<tbody>
<tr>
<td>Methyl eugenol</td>
<td>-8.29</td>
<td>1.74</td>
</tr>
<tr>
<td>Oleanolic acid</td>
<td>-8.27</td>
<td>2.04</td>
</tr>
<tr>
<td>Urosolic acid</td>
<td>-8.17</td>
<td>1.59</td>
</tr>
</tbody>
</table>

All of them have close proximity in their values.

**DISCUSSION AND RESULT**

Rasayana medications are poly herbal and alloyed with variety of phytochemicals. We thoroughly reviewed rasayana herbs and their phytochemicals, to discover, what is so unique in rasayana therapy. We tried to insight rasayana with new rationality. The majority of such medications have common denominators of nootropic herbs and cocktail of biological activities, therefore they have holistic mode of action. The holism may be responsible for low levels of toxicity.

The prime objectives of rasayana medications are to promote anabolism and decline catabolism by different well-established biochemical mechanisms. They make sure that chemoprotective / chemopreventiveness ensure normal healthy longevity free from biotoxic pathology.

Our study found that tridosha concept keeps the orderly homeostasis of body humors and cleans biotoxins by eliminating pathogenic derbias. The antioxidative phytochemicals antagonize viral oxidative stress. COVID-19 pandemic has downgraded psychological acumen of patients due to dysregulation of body functions. Rasayana medication has psychophysiological mechanism for re-establishing energy levels and performance effectiveness supported by health promoting behaviors as well as life style modifications.

Tridosha and psychophysiological concepts endorsed the co-ordination of body, mind and soul. We suggest a novel interdisciplinary encompassment of rasayana with orthobiosis and autophagic herbs for the prospective health concepts.

We found that bioactive six phytochemicals under study have dominance of oxygen functions which act as hydrogen bond doner or acceptor (HBD+HBA) for blocking viral entry through spike glycoprotein by disrupting viral interactions with host cells. The lack of rotational bonds markedly reduced conformational flexibility, further ring fusions impart rigidity. Supposedly it helps better fit with viral receptor.

**CONCLUSION**

Rasayana drugs are divinely blessed by the mother nature. They decode pathogenicity by natural-therapeutics with physiological compatibility. Remarkably they have low profiled toxicology mishaps and pharmacologically better anti-COVID-19 medications.

**ACKNOWLEDGEMENT**

This publication is dedicated to ayurvedic gurus and their disciples who glorified ethical principles of rasayana therapy.

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