

Treatment Strategy of HIV/AIDS in Sub-Saharan Africa

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Review Article

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ABSTRACT

The point of this paper is to build up part of indigenous learning (IK) on counteractive action and administration of human safe infection/AIDS (HIV/AIDS) in neighborhood groups in south of Saharan nations. Distributed articles in books, peer checked on diaries and dim writing that concentrated on HIV/AIDS and IK in south of the Saharan nations were basic looked into. Writing investigated demonstrated that customary cures helped numerous HIV/AIDS to adapt to sickness. Customary cures fundamentally from herbs, nectar and psychosocial advising captured side effects of HIV/AIDS that would prompt to AIDS. Some of conventional cures details had nourishment parts for patients who had no hunger. IK with its experts has a critical part to play on HIV/AIDS both in avoidance and treatment. It can be caught, deciphered and be utilized for the overall population for both in counteractive action and treatment among the HIV/AIDS patients.

INTRODUCTION

Global archives from UNAIDS and WHO, distributed articles in books and companion surveyed diaries and also dim writing that concentrated on HIV/AIDS and IK in African nations south of the Sahara were basic evaluated so as to build up the part of IK in both anticipation and administration of HIV/AIDS tainted patients. The discoveries were compressed and are introduced beneath ^[1-4].

METHODOLOGY

Forty two records including worldwide archives from WHO and UNAIDS, peer investigated articles in diaries, books and dark writing that concentrated on HIV/AIDS and IK were basic looked into and broke down ^[5-7].

Indigenous Information and Administration of HIV/AIDS

The examination of the discoveries demonstrated that Africa south of the Sahara was home to approximately 605 million individuals (9% of the total populace), the greater part of them (80%) lived in provincial regions ^[8-16]. Around 70% of these individuals were working in ranches and were not ready to encourage the greater part of the general population ^[17-20]. Again the greater part of the nation's south of the Sahara has restricted alternatives for traditional medicinal services ^[20-22]. It turns out to be more awful with the expanding HIV contaminations and different irresistible ailments which were getting to be distinctly periodical ^[22-25]. In a few sections of African nations south of the Sahara, a solitary wellbeing office served upwards of 350,000 individuals, and the proportion of specialists to tenants was 1:50,000 ^[26-29]. Indeed, even among the individuals who could manage the cost of the advanced wellbeing treatment, social insurance could be viewed as an extravagance ^[30-33]. There was no big surprise to see numerous patients to THPs with various age gather, level of instruction and occupation looking for social insurance; as a choice or as an option after the disappointment of the ordinary prescription ^[34-39]. Once more, due to the shame joined to the HIV/AIDS a few people did not have any desire to be known by their companions; and thus, depend on THPs as the best choice for covering the medical issue endured ^[40-43].

The issue with HIV/AIDS is the multi side effects of the sicknesses; and these put the customers at the junction where to look for the correct treatment at the opportune time ^[44-46]. For example, in surveys it was learnt

that a portion of the indications of HIV/AIDS were normal afflictions which individuals endured in the groups and could be dealt with by prominent basic known customary herbs in the prevalent wellbeing segment [47-50]. These side effects included over reproducing amid the month to month time frame for ladies, wooziness, looseness of the bowels and hacking to specify few were being overseen by known customary natural solution in the group [51-53]. The vast majority of the general population would utilize the known home grown solutions for treat such diseases. At the point when the ailment did not react to these cures, then the patient either went to maduka dawa (pharmaceutical stores) or to THPs or to dispensary depending to the trusted reason for the ailment/illness [54-57]. Kayombo [4] in his review found that there were more guys (56.1%) who looked for human services to THPs than females (43.9%). However, Kayombo [4] discoveries conceded from the HIV/AINDS and Traditional Medicine a venture conveyed by the Institute of Traditional Medicine (ITM) in 2003-2005 of Muhimbili University of Health and Allied Sciences (MUHAS) in Arusha and Dar-es-salaam where it discovered 79.1% were utilizing THPs for treating HIV/AIDS were females [54-56]. The fundamental purposes behind utilizing customary pharmaceutical results of IK were shame appended to the ailment and lack of medications a typical issue to numerous wellbeing offices in Tanzania and other African nations in the rustic ranges [57-59].

The part of IK through THPs in overseeing HIV/AIDS has been reported in numerous literary works. For instance, Tanga AIDS working Group have treated more than 5000 AIDS patients with shrewd contaminations utilizing home grown pharmaceutical [60-63]. Extend supervisor of Tanga AIDS Working Group, has demonstrated that home grown cures had expanded craving, put on weight, halted looseness of the bowels, diminished fever, treated oral thrush, resolve skin rashes and parasite, cure herpes zoster and clear ulcers. Most patients reported seeing positive outcomes inside 7-30 days amid the treatment. Likewise, Tanga AIDS Working Group has turned into the referral community for patients who came to healing facility for testing, treatment or directing [19,26]. As a team with THPs, Tanga AIDS working group has distinguished three effectual home grown cures. It has built up these home grown plants for the treatment of an assortment of diseases generally connected with HIV/AIDS [64-66].

The HIV/AIDS and Traditional Medicine Project of the Institute of Traditional Medicine (ITM), Muhimbili University of Health and Allied Sciences (MUHAS) on other hand reported 155 HIV/AIDS were being dealt with by THPs. The discoveries from this review have appeared more than 70% of the customers had clinical side effects like migraine, unsteadiness, stomach torment, retching, herper zoster, skin surges and looseness of the bowels. All these were being overseen by THPs. In the time of study no genuine reactions of the customary cures were accounted for. As a team with THPs, the ITM of MUHAS has accompanied five details from natural cures. These were hack blend, morisela for different astute diseases, alovera cream for skin contamination, tumbo blend for stomach ulcers, ini solution for liver disease. Again in East African Network of Traditional Medicine and Medicinal Plants extend (2004-2008) have demonstrated that wellbeing laborers in provincial regions reported the greater part of the HIV/AIDS patients went to THPs in light of the fact that there was no medications to ease the agony of various afflictions in their individual wellbeing offices. Additionally Kayombo [4] in his review in Njombe district reported a few natural plants that were utilized to treat AIDS and AIDS related patients. These patients got alleviation from the torments and manifestations were disposed [67-69].

In Tanzania as well as studies on IK done in Kenya indicated THPs oversaw more than 48 conditions including astute contaminations such oral thrush. Promote in Uganda reported that herpes Zoster could be treated with herbs that worked all the more quickly and had less symptoms then Acyclovir, the customary treatment for herpes Zoster. Additionally *Warburgia salutaris* was observed to be viable against crafty contagious contamination and respiratory disease. *Azardiracta indica* plant has indicated positive outcomes on HIV/AIDS proposing that the plant may be valuable immunopotentiating specialist that may help HIV/AIDS patients to capturing shrewd disease. Service of wellbeing in Zambia has permitted Godfrey Shilalukey to work from the biggest doctor's facility in Zambia, the University Hospital (UTH) as an option human services supplier for HIV/AIDS [67-72].

The utilization of customary herbs is in Africa, as well as in created nations. For instance, in United States of America individuals with HIV utilize numerous sorts of option methodologies including conventional home grown drug to defer AIDS. Numerous HIV tainted patients search for reciprocal drug as an approach to forestall or alleviate AIDS treatment symptoms; since some of reactions are not effortlessly treatable with routine pharmaceutical. There was a developing interest for integral treatments that may support resistance, alleviate push, or enhance general wellbeing and prosperity [72-76]. It is conceivable that there are others too. Thinks about should be conveyed to survey some of asserted home grown solutions for have a beneficial outcome to HIV/AIDS patients and build up the measurement.

Regardless of numerous HIV/AIDS patients going by THPs for looking for human services as appeared in studies inspected, a portion of the bio restorative experts were still skeptical on utilizing customary herbs for treating HIV/AIDS. For instance one of the specialists in immunology of UTH contended he needed to realize what

parts of drug kill or manage the infection. Be that as it may, human body is perplexing and the present logical information can't clarify everything on wellbeing. There is a great deal in IK which can't be clarified by the present logical information. Additionally it must be recollected that each straightforward treatment to HIV/AIDS draws out existence of the patients [77-81].

What's more these herbs may defer HIV patients from creating AIDS, fortifying the invulnerable framework, decrease push, keeping up great nutritious practice and proper practice direction. In the Workshop held in Nairobi on HIV/AIDS and Traditional Medicine a review by the ITM, MUHAS uncovered that few plants that were demonstrated for treatment of HIV/AIDS and entrepreneurial contaminations from THPs, some of them have resulting been appeared in lab test to contain particles powerful in restraining HIV replication. These outcomes upheld contention that there were some home grown plants that may have ARVs fixings. That is the reason it is in effect unequivocally contended that in the mediation methodologies ought to likewise incorporate IK with its experts [82-87].

Most importantly, a critical perspective, which was most overlooked in biomedicine practices, was the significance of otherworldly and social angles in taking consideration the patients. It is just as of late these angles were being recognized in created nations in the biomedicine rehearses. In IK, these angles were focal in recuperating process with center psychosocial mending that concentrations at setting the brain of the patient settled. While the creator was in the hands on work he watched THPs were putting forth supplications, unique strategies for gathering plants at various circumstances in 24 hours of a day. Advance they educated the home grown cures as human being [88-91].

CONCLUSION

Despite the fact that IK with its experts are dismissed in human services, writing audited demonstrate that they have a huge part to play both for aversion and treatment of the HIV/AIDS contaminated people groups. The shortage of numerous fundamental medications incorporating against retroviral sedates in rustic furthermore in some urban focuses in creating nations implies that the vast majority will keep on using conventional home grown medicines for HIV related conditions including deft diseases [92-96]. The investigated writing recommends IK cures can be caught made an interpretation of and be used to the overall population. In this manner, there is a need to distinguish the helpful herbs, which can be utilized to restrain spread of HIV/AIDS and treat HIV/AIDS patients as appeared by Tanga AIDS Working Group and the ITM. The distinguished herbs ought to be screened for lethality level and some conceivable symptoms. On the off chance that the symptoms are not huge, make them for open utilization subsequent to setting up institutionalized measurements. Measurements of TRM are a typical cry from biomedicine and a few analysts. The Chairman of Tanzania AIDS Commission on exchange about the aftereffects of ITM HIV/AIDS and Traditional Medicine Project had this to state:

"Home grown cures that have appeared to lessen and clear side effects of HIV/AIDS, create dose and provide for contaminated HIV patients with a specific end goal to postpone the improvement to AIDS [97-100]. However, specialists ought to keep doing the logical work of building up the medications". THPs are the fundamental suppliers of social insurance in rustic territories in African nations south of the Sahara. These THPs could likewise be enrolled to chip away at preventive AIDS programs like PMTCT condom dispersion and sharpening on sexual transmitted infection. Facilitate THPs could help demystifying HIV/AIDS publicity, utilization of condoms and lessening hazard socio-social practices, for example, spouse legacy; purging functions to dowager (socio-social practices in some African people group) and disgrace including the utilization of ARVs. Most importantly, THPs could enhance in administration of HIV/AIDS specific as for wholesome guidance, profound passionate and advising as appeared in writing evaluated.

REFERENCES

1. Thomasson R, et al. Pathology Image of the Month: Cough and Shortness of Breath in a Noncompliant Patient With HIV/AIDS. *J La State Med Soc.* 2015;167:202-204.
2. Cruciani RA, et al. L-carnitine Supplementation in Patients with HIV/AIDS and Fatigue: A Double-Blind, Placebo-Controlled Pilot Study. *HIV AIDS (Auckl).* 2015;7:65-73.
3. Eiznhamer DA, et al. Safety and Pharmacokinetic Profile of Multiple Escalating Doses of (+) Calanolide A, a Naturally Occurring Non Nucleoside Reverse Transcriptase Inhibitor, In Healthy HIV-Negative Volunteers. *HIV Clinical Trials.* 2001;3:435-450.
4. Kayombo EJ, et al. Role of Traditional Healers in Psychosocial Support in Caring for the Orphans: A Case of Dar-Es Salaam City, Tanzania. *J Ethnobiol Ethnomed.* 2005;1:3.

5. Falco M, et al. A Nutritional therapy in Metabolic Changes in Individuals with HIV/AIDS. *Rev Saude Publica*. 2012;46:737-46.
6. Kyobutungi C, et al. HIV/AIDS and the Health of Older People in the Slums of Nairobi, Kenya: Results from a Cross Sectional Survey. *BMC Public Health*. 2009;9:153.
7. Lachaud JP. HIV prevalence and Poverty in Africa: Micro- and Macro-Econometric Evidences Applied to Burkina Faso. *J Health Econ*. 2007;26:483-504.
8. Kisangau DP, et al. Use of Traditional Medicines in the Management of HIV/AIDS Opportunistic Infections in Tanzania: A Case in the Bukoba Rural District. *J Ethnobiol Ethnomed*. 2007;3:29.
9. Mboera LE, et al. The Readiness of the National Health Laboratory System in Supporting Care and Treatment of HIV/AIDS in Tanzania. *BMC Health Serv Res*. 2015;15:248.
10. Nwaorgu O, et al. Prevalence of Human Immunodeficiency Virus Seropositivity in Head and Neck Malignancies in Sub-Saharan Africa. *Acta Otolaryngol*. 2007;127:1218-1221.
11. Perpetus IC. Healthcare in Developing Countries. *Medical Practice Review*. 2010;1:9-11.
12. Hardon A and Dilger H. Global AIDS Medicines in East African Health Institutions. *Med Anthropol*. 2011;30:136-157.
13. Lima MA, et al. Virtual Guide on Ocular Self-Examination to Support the Self-Care Practice for People with HIV/AIDS. *Rev Esc Enferm USP*. 2014;48:285-291.
14. Kayombo EJ, et al. Experience on Healthcare Utilization in Seven Administrative Regions of Tanzania, *J Ethnobiol Ethnomed*. 2012;8:5.
15. Henry WK, et al. Peering into the Future: Searching for Answers to Old and New Questions about HIV/AIDS. *Minn Med*. 2009;92:50-54.
16. Rufaro C. An Overview of Traditional Medicine Situation in African Region. *Africa Health Monitor*. 2003;4:4-7.
17. Kayombo EJ, et al. Experience in Initiating Collaboration of Traditional Healers in Managing HIV/AIDS in Tanzania. *J Ethnobiol Ethnomed*. 2007;3:6.
18. Kayombo EJ, et al. Traditional Healer's Knowledge and Implications to the Management and Control of HIV/AIDS in Arusha, Tanzania. *Tanzan Health Res Bull*. 2006;8:95-100.
19. Makunde WH, et al. Lost to Follow up and Clinical Outcomes of HIV Adult Patients on Antiretroviral Therapy in Care and Treatment Centres in Tanga City, north-eastern Tanzania. *Tanzan J Health Res*. 2012;14:250-256.
20. Stanifer JW, et al. The Determinants of Traditional Medicine use in Northern Tanzania: a Mixed-Methods Study. *PLoS One*. 2015;10:e0122638.
21. Paul SR, et al. (2001) Polymorphous Hemangioendothelioma in a Child with Acquired Immunodeficiency Syndrome (AIDS). *Pediatr Blood Cancer*. 2008;50:663-665.
22. Savarino A and Shytaj IL. Chloroquine and Beyond: Exploring Anti-rheumatic drugs to Reduce Immune Hyperactivation in HIV/AIDS. *Retrovirology*. 2015;12:51.
23. Bao L, et al. Modelling National HIV/AIDS Epidemics: Revised Approach in the UNAIDS Estimation and Projection Package 2011. *Sex Transm Infect*. 2012;88:i3-i10.
24. Jimoh A, et al. Roles of Traditional Healers in the Fight Against HIV/AIDS. *Ethno-Med*. 2008;2:153-159.
25. Khan LK, et al. HIV/AIDS Knowledge amongst Gypsies in Lahore and their Preventive Practices. *J Coll Physicians Surg Pak*. 2011;21:553-555.
26. Atilola GO, et al. HIV/AIDS and the Long-Distance Truck Drivers in South-West Nigeria: A Cross-Sectional Survey on the Knowledge, Attitude, Risk Behaviour and Beliefs of Truckers. *J Infect Public Health*. 2010;3:166-178.
27. Mamotte N, et al. Convergent Ethical Issues in HIV/AIDS, Tuberculosis and Malaria Vaccine Trials in Africa: Report from the WHO/UNAIDS African AIDS Vaccine Programme's Ethics, Law and Human Rights Collaborating Centre consultation, 10-11 February 2009, Durban, South Africa. *BMC Med Ethics*. 2010;11:3.
28. Otieno J, et al. Vernacular Dominance in Folk Taxonomy: A Case Study of Ethnospecies in Medicinal Plant Trade in Tanzania. *J Ethnobiol Ethnomed*. 2015;11:10.
29. Hsiao AF, et al. Complementary and Alternative Medicine use and Substitution for Conventional Therapy by HIV-Infected Patients. *J Acquir Immune Defic Syndr*. 2003;33:157-165.
30. Cáceres CF and Mendoza W. The national Response to the HIV/AIDS Epidemic in Peru: Accomplishments and Gaps—A Review. *J Acquir Immune Defic Syndr*. 2009;51:S60-S66.
31. Kayombo EJ, et al. Experience of Initiating Collaboration of Traditional Healers in Managing HIV and AIDS in Tanzania. *J Ethnobiol Ethnomed*. 2007;3:6.

32. Abramsky T, et al. A Community Mobilisation Intervention to Prevent Violence against Women and Reduce HIV/AIDS Risk in Kampala, Uganda (the SASA! Study): study protocol for a cluster randomised controlled trial. *Trials*. 2012;13:96.
33. Pearce ME, et al. The Cedar Project: Resilience in the Face of HIV Vulnerability within a Cohort Study Involving Young Indigenous People who use Drugs in three Canadian Cities. *BMC Public Health*. 2015;15:1095.
34. Korenromp EL, et al. Impact and Cost of the HIV/AIDS National Strategic Plan for Mozambique, 2015-2019-- Projections with the Spectrum/Goals Model. *PLoS One*. 2015;10:e0142908.
35. Kayombo EJ. Kupinga Tego in Southern Highlands of Tanzania: A case of one African Traditional Methods of Healing. In: *Psychotherapy in Africa, Third Issue* edited by Sylvester Ntomchukwu Madu, Peter Kakubeire Alfred Pritz, Pietersburg. 1990;20-34.
36. Kayombo EJ. Framework for Documenting Traditional Psychotherapy in Africa, In Ntomchukwu Sylvester Madu & Saraswathie Govender (editors), *Mental Health and Psychotherapy, World Council for Psychotherapy African Chapter*, Polokwane, Pietersburg. 2005;67-78.
37. Gwadz M, et al. Behavioral Intervention Improves Treatment Outcomes among HIV-Infected Individuals who have Delayed, Declined, or Discontinued Antiretroviral Therapy: a randomized controlled trial of a Novel Intervention. *AIDS Behav*. 2015;19:1801-1817.
38. Govender R, et al. AIDS-Related Knowledge, Stigma and Customary Beliefs of South African Construction Workers. *AIDS Care*. 2016; 2:1-7.
39. Cortés Moncada C. WHO and UNAIDS Call to Control the Epidemic of HIV/AIDS. *Rev Chilena Infectol*. 2015;32:711.
40. Zeng W, et al. Resource Needs and Gap Analysis in achieving universal access to HIV/AIDS services: A Data Envelopment Analysis of 45 Countries. *Health Policy Plan*. 2016;31:624-633.
41. Sow PS, et al. Implementation of an Antiretroviral Access Program for HIV-1-Infected Individuals in Resource-Limited Settings: Clinical Results from 4 African Countries. *J Acquir Immune Defic Syndr*. 2007;44:262-267.
42. Connors KP, et al. Optimizing Antibiotic Pharmacodynamics for Clinical Practice. *Pharmaceut Anal Acta*. 2013;4:214.
43. Sultana N, et al. Simultaneous Liquid Chromatographic Determination of Two Co-Prescribed Anti- Cancer Drugs in Bulk Drug, Dosage Formulations and in Human Serum Using Multivariate Technique: Application to in vitro Drug Interaction. *Pharmaceut Anal Acta*. 2013;4:215.
44. Hu L, et al. A Novel Approach to Formulate and Optimize Orally Disintegrating Tablets of Bambuterol Hydrochloride. *Pharmaceut Anal Acta*. 2013;4:216.
45. Zheng WS, et al. Pharmacokinetic Study of Lappaconitine Hydrobromide Transfersomes in Rats by LC-MS. *Pharmaceut Anal Acta*. 2013;4:217.
46. Shintani H. HPLC Analysis of Vitamin A and Carotenoids. *Pharmaceut Anal Acta*. 2013;4:218.
47. Shintani H. HPLC Analysis of Extracted Coenzyme Q (Coq) Homologues from Animal Tissues. *Pharmaceut Anal Acta*. 2013;4:219.
48. Valle TA, et al. Lactobionic Acid Produced by *Zymomonas mobilis*: Alternative to Prepare Targeted Nanoparticles. *Pharmaceut Anal Acta*. 2013;4:220.
49. Shintani H. Analysis of Free Fatty Acids in Blood of Healthy Person and that of Hepatitis Patient. *Pharmaceut Anal Acta*. 2013;4:222.
50. Mena F. When Pharma Meets Nano or The Emerging Era of Nano-Pharmaceuticals. *Pharmaceut Anal Acta*. 2013;4:223.
51. Shintani H. HPLC Analysis of Phospholipids and their Hydroperoxides with Chemiluminescence Detection. *Pharmaceut Anal Acta*. 2013;4:225.
52. Li L, et al. Liuwei Dihuang Wan, A Traditional Chinese Medicinal Formula, Protects Against Osteoporosis. *Pharmaceut Anal Acta*. 2013;4:226.
53. Genel SG, et al. Clinical Presentation of Celiac Disease Masks Therapeutic Perspectives of Celiac Disease. *Pharmaceut Anal Acta*. 2013;4:228.
54. Al-Hwiesh AK and Abdul-Rahman IS. Intermittent Dosing of Cinacalcet is also Effective in Treating Secondary Hyperparathyroidism in Hemodialysis Patients. *Pharmaceut Anal Acta*. 2013;4:229.
55. Vieillard V, et al. Development and Validation of a Stability- Indicating High Pressure Liquid Chromatography Method for Determination of Prostaglandin E1 and its Degradation Products in an Intracavernous Formulation. *Pharmaceut Anal Acta*. 2013;4:230.

56. Praveen C, et al. Method Development and Validation for Simultaneous Estimation of Ethinyl Estradiol and Drospirenone and Forced Degradation Behavior by HPLC in Combined Dosage Form. *Pharmaceut Anal Acta*. 2013;4:231.
57. Ashour S. New Kinetic Spectrophotometric Method for Determination of Atorvastatin in Pure and Pharmaceutical Dosage Forms. *Pharmaceut Anal Acta*. 2013;4:232.
58. Salem H. et al. Stability Indicating Validated Chromatographic Methods for Determination of Buflomedil in Presence of its Degradation Products. *Pharm Anal Acta*. 2013;4:233.
59. Mena F, et al. Physical Characterization of Blood Substitutes by Carbon-Fluorine Spectroscopy. *Pharm Anal Acta*. 2013;4:235.
60. Cavallari C, et al. Thermal Study of Anhydrous and Hydrated Forms of Olanzapine. *Pharm Anal Acta*. 2013;4:237.
61. Shie PH, et al. The Flavonoids in Citrus Madurensislour and their Anti-Hepatitis B Virus Activity. *Pharm Anal Acta*. 2013;4:239.
62. Sheikh REI, et al. Utility of Oxidation- Reduction Reaction for Determination of Gemifloxacin Mesylate and Moxifloxacin HCl in Pure Form and in Pharmaceutical Formulations using N-Bromosuccinimide. *Pharm Anal Acta*. 2013;4:240.
63. Shintani H. ROS (Reactive Oxygen Species)-Generating Systems in Mitochondria, Microsomes and Peroxisomes. *Pharm Anal Acta*. 2013;4:242.
64. Saeed Arayne M, et al. A Validated Reverse Phase Liquid Chromatographic Method for Simultaneous Analysis of Enalapril Maleate, Hydrochlorothiazide and Furosemide in Active Pharmaceutical Ingredients, Pharmaceutical Dosage Forms and Human Serum. *Pharmaceut Anal Acta*. 2013;4:244.
65. Vaidya M and Panchal HK. Comparative Study of Data Generated by Structural Annotation of the Genome for Identifying the Unique Parameter Responsible For Pathogenic Property of Helicobacter Pylori. *Pharmaceut Anal Acta*. 2013;4:249.
66. Bandyopadhyay S, et al. An Explicit Review on Quantitative Estimation of Candesartan Cilexetil Employing Various Analytical Techniques. *Pharmaceut Anal Acta*. 2013;4:254.
67. Ali NW, et al. Spectrophotometric Methods for Simultaneous Determination of Two Hypouricemic Drugs in their Combined Dosage Form. *Pharmaceut Anal Acta*. 2013;4:255.
68. Abdel Razeq SA, et al. Development of Stability Indicating Densitometric and Enhanced Sensitivity Spectrofluorimetric Methods for Determination of Zaleplon in Presence of its Acidic Degradation Products. *Pharmaceut Anal Acta*. 2013;4:256.
69. Sultana N, et al. Development and Validation of a Simple and Efficient RPLC Method for Analysis of Captopril, Metformin, Pioglitazone and Glibenclamide in API, Formulations and Human Serum. *Pharmaceut Anal Acta*. 2013;4:257.
70. Shintani H. Development of Test Method for Pharmaceutical and BioPharmaceutical Products. *Pharmaceut Anal Acta*. 2013;4:258.
71. Almeman AA and Aljofan M. Direct-To-Physician Advertising and Antibiotic Utilization in Upper Respiratory Tract Infection: A Critical Analysis. *Pharmaceut Anal Acta*. 2013;4:259.
72. Sultana N, et al. Spectrophotometric Studies of Lamotrigine Charge Transfer Complexes: Synthesis and Characterization. *Pharmaceut Anal Acta*. 2013;4:260.
73. Chitlange SS, et al. Stability-Indicating HPTLC Method for Simultaneous Estimation of Amoxicillin Trihydrate and Ambroxol Hydrochloride in Bulk and Pharmaceutical Dosage Form. *Pharmaceut Anal Acta*. 2013;4:261.
74. Bais S, et al. Method Development and Validation for Desogestrel and Ethinylestradiol in Combined Pharmaceutical Dosage Form by RP-HPLC. *Pharmaceut Anal Acta*. 2013;4:262.
75. Hasan N, et al. Simultaneous Determination of NSAID and Antimicrobial Preservatives Using Validated RPHPLC Method: An Application in Pharmaceutical and Clinical Laboratories. *Pharmaceut Anal Acta*. 2013;4:263.
76. Suedee R. The Use of Molecularly Imprinted Polymers for Dermal Drug Delivery. *Pharmaceut Anal Acta*. 2013;4:264.
77. Nissankararao S, et al. Estimation of Irbesartan in Bulk and Dosage Forms by New Simple UV Spectrophotometry Using Hydrotropic Technique. *Pharmaceut Anal Acta*. 2013;4:265.
78. Uchiumi F, et al. Effect of Lignin Glycosides Extracted from Pine Cones on the Human SIRT1 Promoter. *Pharmaceut Anal Acta*. 2013;4:266.

79. Mark L, et al. The Effect of Switching to the High-Efficient Rosuvastatin on the Success of Lipid Lowering Therapy in High Risk Patients. The CORVUS (Controlled Targets for High Vascular Risk Patients Using Effective Statins) Study. *Pharmaceut Anal Acta*. 2013;4:267.
80. Genel S, et al. Food Allergy: Always a Threat, How do We Treat it? *Pharmaceut Anal Acta*. 2013;4:268.
81. Ahmed KM, et al. Olive Leaf Extract as a New Topical Management for Oral Mucositis Following Chemotherapy: A Microbiological Examination, Experimental Animal Study and Clinical Trial. *Pharmaceut Anal Acta*. 2013;4:269.
82. Abdellah EA, et al. Prevalence and Antibiogram Study of Escherichia coli and Staphylococcus aureus in Turkey Meat in Morocco. *Pharmaceut Anal Acta*. 2013;4:270.
83. Valery HG, et al. Evaluation of Carbon Paste Electrodes Modified with Organic Molecules for the Analysis of Heavy Metals by Square Wave Voltammetry. *Pharmaceut Anal Acta*. 2013;4:271.
84. Lin YW, et al. Cinnamophilin Inhibits Neutrophilic Respiratory Burst and Protects Against Ischemia-Reperfusion Brain Damage. *Pharmaceut Anal Acta*. 2013;4:272.
85. Mahajan N, et al. An Insight in to the Pathogenesis of Diabetic Vascular Diseases: Role of Oxidative Stress and Antioxidants. *Pharmaceut Anal Acta*. 2013;4:273.
86. Uddin G, et al. Bioassayguided Isolation of a Antinociceptive, Anti-inflammatory and Antipyretic Benzofuran Derivative from Viburnum grandiflorum. *Pharmaceut Anal Acta*. 2013;4:274.
87. Hassan MA, et al. Evaluation of Sanazole Cytotoxicity in Human Drug-Sensitive and MDR Uterine Sarcoma Cells. *Pharmaceut Anal Acta*. 2013;4:275.
88. Lee MKK and Di L. Crosstalk the Microdialysis in Scientific Research: from Principle to its Applications. *Pharmaceut Anal Acta*. 2014;5:276.
89. Uryuhara Y and Kawakami K. The Contribution of Pharmacological Agents in the History of Organ Transplantation. *Pharmaceut Anal Acta*. 2014;5:277.
90. Soliman SM, et al. Validated Stability- Indicating UPLC and Derivative Synchronous Fluorescence Spectroscopy Methods for the Determination of Atomoxetine Hydrochloride in Pharmaceutical Preparation. *Pharmaceut Anal Acta*. 2014;5:278.
91. Misra R, et al. Design Considerations for Chemotherapeutic Drug Nanocarriers. *Pharmaceut Anal Acta*. 2014;5:279.
92. Iwamoto J. Monthly Risedronate for the Treatment of Postmenopausal Osteoporosis. *Pharmaceut Anal Acta*. 2014;5:285.
93. Sherley JL. Accelerating Progress in Regenerative Medicine by Advancing Distributed Stem Cell-based Normal Human Cell Biomanufacturing. *Pharmaceut Anal Acta*. 2014;5:286.
94. Saeed Arayne M, et al. Monitoring of Pregabalin in Pharmaceutical Formulations and Human Serum Using UV and RPHPLC Techniques: Application to Dissolution Test Method. *Pharmaceut Anal Acta*. 2014;5:287.
95. Lai JCL, et al. Physical Health Outcomes of Conjugal Bereavement: A Psychoneuroendocrine Model of Resilience. *Pharmaceut Anal Acta*. 2014;5:284.
96. Mallu UR, et al. Periodic or Skip Testing in Pharmaceutical Industry: Us and Europe Perspective. *Pharmaceut Anal Acta*. 2014;5:283.
97. Salvia MV, et al. Comparison of Two Analytical Methods for the Determination of Traces of Veterinary Antibiotics and Steroid Hormones in Soil Based on Pressurised Liquid Extraction (PLE) and Quick, Easy, Cheap, Effective, Rugged, Safe (Modified-Quechers) Extraction. *Pharmaceut Anal Acta*. 2014;5:315.
98. Hafez HM, et al. Development of a Stability-Indicating HPLC Method for Simultaneous Determination of Amlodipine Besylate and Atorvastatin Calcium in Bulk and Pharmaceutical Dosage Form. *Pharmaceut Anal Acta*. 2014;5:316.
99. Cone EJ, et al. The New Science of Abuse-Deterrence Assessment of Pharmaceutical Products; FDA Proposed Guidance and Category 1 Laboratory Studies. *Pharmaceut Anal Acta*. 2014;5:317.
100. Tamimi L, et al. Pioglitazone HCl Levels and Its Pharmacokinetic Application in Presence of Sucralose in Animals Serum by HPLC Method. *Pharmaceut Anal Acta*. 2014;5:318.