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VISION

To emerge as one of the premier pharmacy colleges in the country and produce pharmacy professional of global Standards.

MISSION

• To deliver quality academic programs in Pharmacy and empower the students to meet industrial standards.
• To build student community with high ethical standards to undertake R&D in thrust areas of national and international standards.
• To extend viable outreach programs for the health care need of the society.
• To develop industry institute interaction and foster entrepreneurial spirit among the graduates

Study To Evaluate The Drug Utilization Patterns In The Management Of Ureteral Stent Discomfort

S Shabana, Pharm D Internee

Background Information:

Ureteral stents plays a major role in a wide range of situations where urinary drainage is needed, The insertion of double J stent is considered as a routine and common urological procedure, The ureteral stent might associated with lower urinary tract symptoms and cause ureteral stent discomfort, which results in stent related symptoms such as Frequency, Urgency, Dysuria, Incomplete emptying, Flank pain, Suprapubic pain and Hematuria. Thus inorder to measure such symptoms,The ureteral stent symptom questionnaire (USSQ) a validated instrument which contains six domains is used to assess the stent related symptoms.

Methodology:

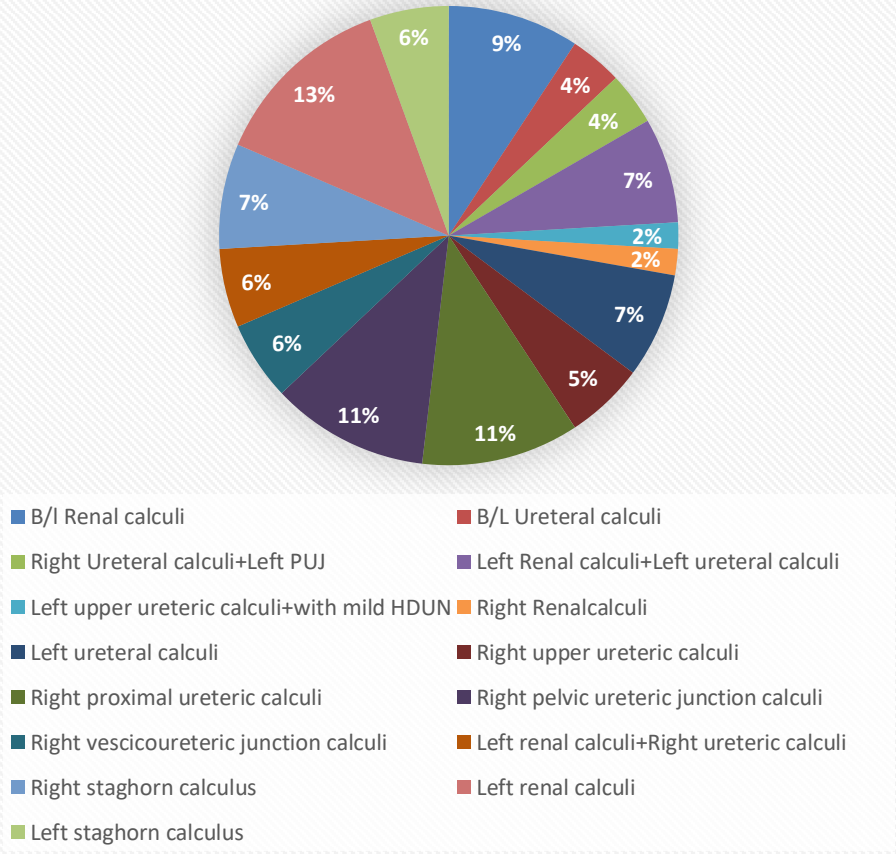
This is a Hospital-based prospective observational study, conducted in the department of Urology, SVIMS, SPMC(W) – Tirupati, carried out for a period of 6 months and collected a total of 54 subjects into the study who underwent ureteral sent positioning. A structured data collection form was used to evaluate the prescription patterns by the administration of an validated USSQ for the assessment of stent related symptoms.

RESULTS:

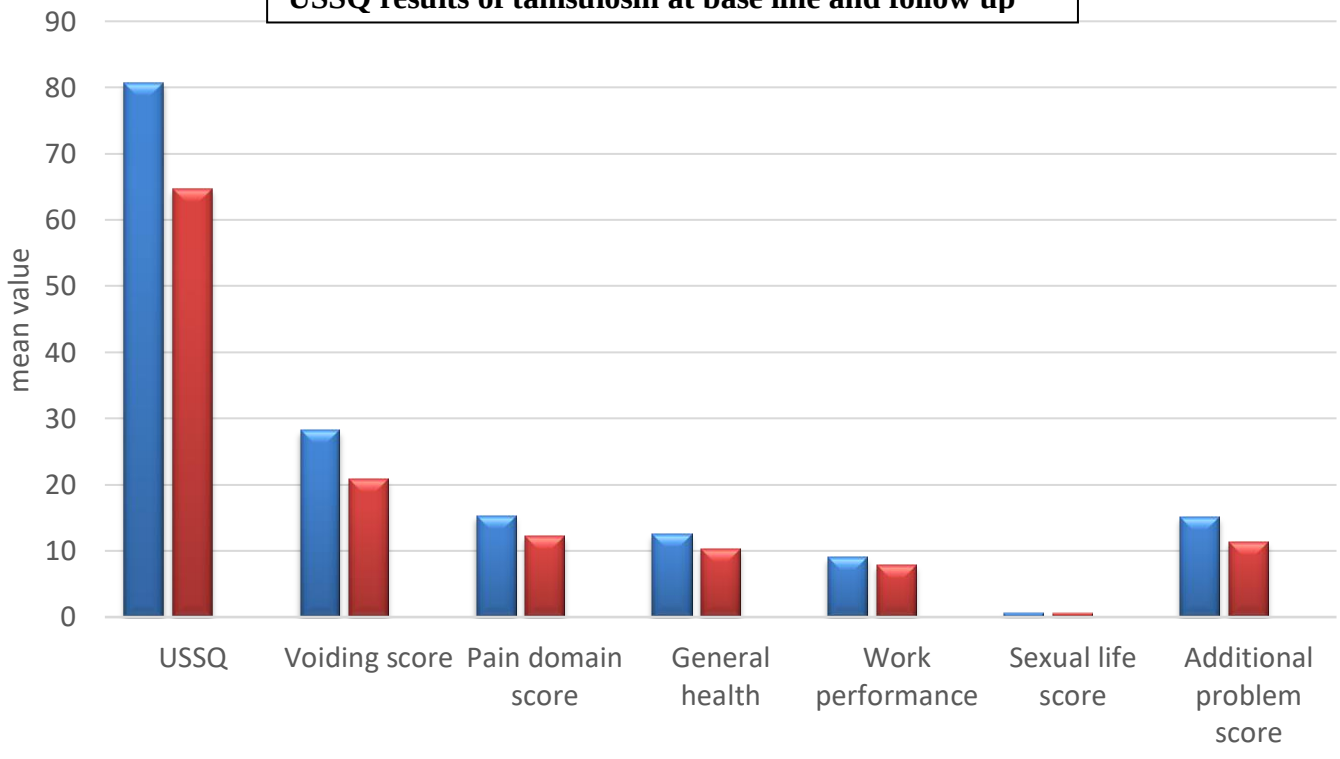
Out of 54 subjects, Tamsulosin (alpha-blockers) were received by 39, Tamsulosin along with Tolterodine (alpha blockers + antimuscarinic) were received by 15 subjects. Among 54 subjects, 32 were Males and 22 were Females.

Among 54 subjects, 25 fall under the age group of 41- 60 years followed by 18 subjects fall under the age group of 21- 40 years followed by 11 subjects under the age group of 61- 80 years. Among 54 subjects, 20 were performed Percutaneous Nephrolithotomy [PCNL] surgery and 27 were performed by Ureteroscopic Lithotripsy[URSL] followed by both PCNL and URSL were performed in 7 patients. Among 54 subjects, the percentage of each symptom were distinguished ,Incomplete voiding-35.18%,Frequency61.1%, Suprapubicpain-62.9%,Hematuria 72.2%, Dysuria-87.03%, Flank pain-29.6%.

Distribution based on disease condition



USSQ results of tamsulosin at base line and follow up



Among ,39 subjects, who were prescribed with TAMSULOSIN the USSQ scores are as follows,the mean values at the baseline and after follow up respectively, and there was decrease in the symptoms during the follow up.

Conclusion:

This study concludes that the subjects with the combination of both tamsulosin and tolterodine seems to have better results in the improvement of stent related discomfort.

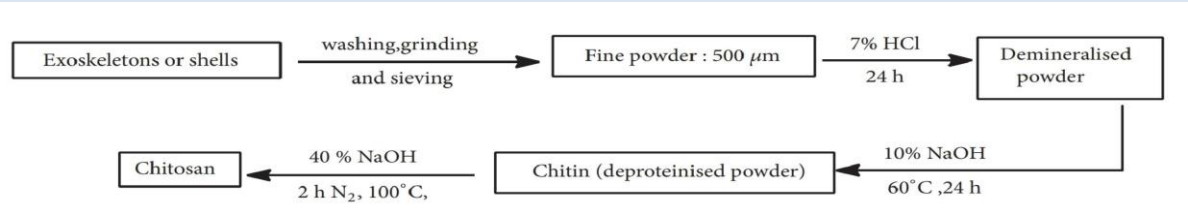
Review on Chitin and Chitosan

P Ditesh, Pharm D III yr

Introduction:

Chitin ($C_8H_{13}O_5N$) is extended long-chain natural biopolymer of N-acetylglucosamine (2-acetamido-2-deoxy-beta-D-glucose monomers linked through beta (1→4) linkages). It is the main component of cell walls in fungi, the exoskeletons of arthropods, for example,crustaceans and insects, the radulae of molluscs etc,.

Chitosan is a polymer of deacetyl alpha-(1, 4) glucosamine $(C_6H_{11}O_4N)_n$ units that can typically be obtained by deacetylation of chitin with NaOH after demineralization and deproteinization of the crustacean shells or exoskeletons.



It behaves as a *pharmaceutical excipient,* permeation enhancer and a *hemostatic agent* utilized as nonwoven sheet in wound healing and dressing and *targeted drug delivery* with more efficiency and less side effects. It has been found to exert *anticancer activity with minimal toxicity on noncancer cells* and such activity against different cancer cell lines significantly depends upon molecular weight and degree of deacetylation (DDA).

Mechanism of Anticancer Activity of Chitosan:

1. Permeation Enhancing Mechanism: Amino group in chitosan leads to protonation in acidic to neutral medium. The positive charge developed in this cationic polysaccharide (pKa ~6.5) makes it water soluble and bio-adhesive to bind with and enhance permeation through negatively charged surfaces such as mucosal and basement membranes. Consequently, chitosan facilitates oral bioavailability of polar drugs and their transportation through epithelial surfaces.

2. Antiangiogenic Mechanism: Chitosan can exhibit antitumor effect by anti-angiogenic mechanism. This process interferes with mutual regulation of proangiogenic and anti-angiogenic factors under the pathological conditions

3. *Sustained Release Mechanism*: A mechanism of anticancer functionality of chitosan is related to its capacity to increase the bio-distribution level and accumulation of drug in tumor cells.

4. *Immunoenhancement Mechanism:* Immuno-enhancing molecular mechanisms could precede either with direct killing of pathogenic microorganisms or tumor cells because of an immune response or with enhancement of cytotoxic activity to inhibit the production of tumor cells by activation of T-cells and NK-cells with the help of IL-1 and TNF-alpha cytokines.

5. *Cellular Apoptotic Mechanism*: It is initiated by activation of procaspase triggered from outside the cell to accelerate the cleavage of cascade to amplify the death signals. Cytotoxicity of chitosan has been found to depend on its molecular weight and degree of deacetylation (DDA). Low molecular weight chitosan (LMWC) has been found to exhibit cytotoxic effects. LMWC possesses higher positive charge in amino group and is more attracted to cancer cell membrane that has greater negative charge than in normal cells.

Chitosan and Its Derivatives:

Derivatization of chitosan due to amino group and acetamido residue has been shown to give the compounds of enhanced solubility and biological activities. Cell toxicity of *2-phenylhydrazine (or hydrazine) thiosemicarbazone chitosan* is associated with its antioxidant behavior due to scavenging of cancer-causing free radicals, and the oxidative stress arising from imbalance between antioxidant defense and free radicals production may favor the etiological condition of cancer. Antitumor activity of *chitosan-metal complexes* is due to their interaction with deoxyribonucleic acid (DNA) and free radicals scavenging behavior. Antitumor property of the derivatives *carboxymethyl chitosan* (CMCS)], *chitosan thymine conjugate, sulfated chitosan* (SCS) and *sulfated benzaldehyde chitosan* (SBCS), *glycol-chitosan* (GChi) and *N-succinyl chitosan (*Suc-Chi) *conjugates*, *furanoallocolchicinoid chitosan conjugate* and *polypyrrole chitosan* from different cellular apoptotic pathways has been reported

Delivery of Chemotherapeutic Drugs:

Chitosan improved the delivery of hydrophobic and hydrophilic conventional chemotherapeutic drugs. Co-delivery of chemotherapeutic drugs using chitosan-based nanocarriers. Chitosan-based drug delivery systems improve the Therapeutic Index of chemotherapeutic drugs through a controlled and sustained release effect. Chitosan-drug nanocarriers also reduce the therapeutic concentration of approved chemotherapeutic drugs; thereby minimize the toxic effects on healthy cells.

i. *Delivery of Hydrophilic Anticancer Drugs*: Conjugated DOX with chitosan via succinic anhydride spacer, and then self-assembled to form chitosan-DOX nanoparticles. Chitosan-DOX nanoparticles were then decorated with trastuzumab which targets the Herceptin receptor. Trastuzumab loaded chitosan-DOX (Tra-chitosan-DOX) nanoparticles showed higher cytotoxic activity towards SKOV3 ovarian cancer cells (Her2 positive) compared to free DOX.Similarly,encapsulation of DOX into pluronic F127 polymer-chitosan micelle enhanced anticancer activity of DOX compared to free DOX

ii. *Delivery of Hydrophobic Anticancer Drugs*: Cisplatin poorly soluble in water and exhibits several side effects, such as chronic neurotoxicity, acute nephrotoxicity, nausea, and vomiting. loaded CIS on HGC nanoparticles (CIS-HGC) through the dialysis method to facilitate sustained release of CIS.

Conclusion and future perspective:

This potential polymer have novel properties such as nontoxicity, low cost transparency, non-immunogenic, biocompatibility as well as biodegradability Moreover, chitosan-based biomaterials induce both humoral and cellular immune responses and, therefore, chitosan could be used in the development of therapeutic cancer vaccines. Chemically modified chitosan or its derivatives available in different formulations eg: emulsion, surfactant, Hydro gels, microsphere, blends, micro particles, nanogels, electrospun fibers, films, nanoparticles, nano composites, scaffold as well as pro drugs.

ADUCANUMAB an Effective Drug for Alzheimer's Disease

G Bhavana, Pharm-D V Year

- AducanumaB is a medication designed to treat Alzheimer's DISEASE.
- It is an amyloid beta-directed monoclonal antibody.
- It targets aggregated forms of amyloid beta (Aβ) found in the brains of people with Alzheimer's disease to reduce its buildup.

PHARMACOKINETICS:

Absorption

A 10 mg/kg intravenous dose of aducanumab reached a Cmax of 182.7 µg/mL, with a Tmax of 3.0 hours.

Distribution

The volume of distribution of aducanumab is 9.63 L.

Metabolism

Aducanumab is expected to be broken down into smaller oligopeptides and amino acids.

Elimination

Monoclonal IgG is predominantly eliminated by catabolism to individual amino acids that are either recycled in the body or metabolized for energy.

Mechanism of action:

- Aducanumab is a monoclonal IgG1 antibody that binds to amyloid-β at amino acids 3-7. The amyloid-β residues Phe4, His6, Glu3, and Arg5 are responsible for the majority of the contact between amyloid-β and aducanumab's Fab region.human trials show non-significant changes in amyloid-β40 and amyloid-β42 across a dose range of 0.3-30 mg/kg and an increase in amyloid-β40 and amyloid-β42 at 60 mg/kg

DOSE AND ROUTE OF ADMINISTRATION:

Injectable solution

- 100mg/mL (1.7-mL, 3-mL single-dose vials)
- Administered as IV infusion every 4 weeks and at least 21 days apart
- The treatment is initiated in patients with mild cognitive impairment or mild dementia stage of disease, the population studied in clinical trials.

Dosing titration schedule

- Infusions 1-2: 1 mg/kg IV q4Weeks
- Infusions 3-4: 3 mg/kg IV q4Weeks
- Infusions 5-6: 6 mg/kg IV q4Weeks
- Infusion 7 and beyond: 10 mg/kg IV q4Weeks

Storage

- Unopened vials
- Refrigerate at 2-8ºC (36-46ºF) in original carton until use to protect from light; do not freeze or shake
- If no refrigeration is available, may store in its original carton to protect from light at room temperature up to 25ºC (77ºF) for up to 3 days
- Prior to dilution
- Unopened vials may be removed from and returned to refrigerator, if necessary, when kept in the original carton; not to exceed a total of 24 hr at room temperature (up to 25ºC [77ºF])

Diluted solutions

- After dilution, immediate use is recommended
- If not used immediately, refrigerate diluted solution at 2-8ºC (36-46ºF) for up to 3 days, or store at room temperature up to 30ºC (86ºF) for up to 12 hr

Contraindications:

Pregnancy:-

There are no adequate data on use in pregnant females to evaluate for drug-associated risks of major birth defects, miscarriage, or other adverse maternal or fetal outcomes.

Lactation:-

No data are available on presence of aducanumab in human milk, effects on the breastfed infants, or effects on milk production.

Perfect Click

Dr M Niranjan Babu Birthday Celebraions-2022

Blood Donation Camp in College Campus

Fresher's Day Celebrations - 2022

Departmental Activities January-2022:

No of Patients Screened	Drug Information Queries	Adverse Drug Reactions	Medication Errors	No of Prescriptions Audited
685	22	26	08	648