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Bone Disease Treatments and Drug Developments

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EDITORIAL

Human bone is one of the most vulnerable tissues in human body. In the life-time of a lot of people, bone tissue is commonly met with [1-7]. Usually, bone disease recovery needs long-period of times to finish. After formal surgery or other radical treatments, bone disease recovery take parts important roles for people with different bone diseases. In order to improve therapeutic outcomes for bone disease treatment, high quality bone disease diagnosis, intervention, therapeutics and drug developments are indispensable for bone disease treatments and patient recovery worldwide [8-17]. This editorial highlights the biomedical information and discusses them in detail.

CLINICAL THERAPEUTICS

Bone impairment recovery and treatments are divided into several categories and specified them in detail; Pharmacological information (drug category and mechanisms) and therapeutic options (disease category and patient conditions) for clinical trials against common bone diseases are outlined in Table 1.

CO-MORBIDITY AND THERAPEUTICS TO DIFFERENT AGE OF HUMAN BEINGS

The biomedical studies for co-morbidity and therapeutics to different age of patients are modern medical challenge and abstract increasing attentions worldwide [18,19]. Especially in bone diseases, treatment outcomes for different age categories are commonly diverse. We need to notice them in clinical bone-disease trials. In the future, growing body of biomedical research for co-morbidity and therapeutic difference among disease diagnosis, drug target/drug selections and patient condition will be promoted.

DRUG DEVELOPMENTS

Drug development is an important area for bone disease treatment promotions and cost-cut [10-25]; The possible avenues for drug development promotions and therapeutic benefiting are enlisted as following topics;

- 1. From single inorganic elements into multiple inorganic elements;
- 2. More drugs should be derived from herbal medicine;
- 3. More drug mechanisms should be studied;

Patient Type	Mechanism	Drug category
Patients with bone pains or osteoporosis	Bone composition	Mineral
Patient needs bone growth and recoveries	Mineral absorption	Vitamins
Different patients with bone diseases	Genes or molecules	Synthetic compounds
Patients with food absorption or preference problems	Wide-range of biological activity	Natural chemotherapy agents
New options for patients	Diversity	Herbal medicine
Patients for failure by conventional therapy	Bone hormone and molecules	Biotherapy
Drug function promotion and cost reductions	Drug stable	Pharmaceutical

Table 1: Pharmacological information for clinical trials.

- 4. More bio-agents will be developed;
- 5. Find more drug targets;
- 6. Personalized medicine in drug developments;
- 7. Developments of wide-spectra drugs that can have far-reaching efficacy against broad-ranges of symptoms;
- 8. Pharmaceutical innovation that can reduce drug costs and undesired side-effects;
- 9. Building good mathematical models and network;

FUTURE DIRECTION

Osteoporosis treatment for old people is very difficult because they are refractory to almost all conventional medications. New ideas must be created to counteract these therapeutic limitations and provide new medications for these bone diseases in old patients; targets to co-morbidity [19]; precision and personalized medicine innovation [20]; better nursery work [16,17]; new drug development [22-24]; math-therapeutic modality establishments for train medical students/junior doctors and clinical therapeutic promotion [13].

CONCLUSION

Patho-therapeutic relation of bone disease pathology and treatments must be translated and developed into new biomedical discoveries and drug categories from bench to the bedside. Expanding clinical therapeutics and cost-effective evaluation is important and indispensable for drug developments and clinical paradigm establishments. Of course, new generation of clinical validity routines and personalized medicine is very useful for high-quality requirements of clinical bone disease treatments.

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