Research Paper

CLINICAL INVESTIGATION

Analysis of the Current Clinical Research Management System of Investigator Initiated Trials in China

Abstract

Objective: With the rapid increasing clinical trials in China in recent years, there has been rising concern on the management of investigator initiated trials. Compared with the trials sponsored by pharmaceutical companies, IIT is facing practical challenges in China due to the lack of experience by investigator and immature regulatory circumstances. We conducted an internet-based survey to understand the overall picture of IITs management in China.

Methods: An internet-based questionnaire was developed and the staff of clinical trial offices from different types of hospitals was invited to provide response via mobile based App or online website in 2 weeks. We have collected the responses from the following aspects: administrative and governance infrastructure, ethical review, project management, funding resources and research staff management.

Results: From December 8 to 20, 2016, a total of 259 responses were collected from the staffs that are mainly responsible for the clinical trial management and scientific research based in the different clinical facilities.

Conclusion: In China, three key factors are important to improve the management on IITs: funding support, staffing resourcing and regulatory guidance.

Keywords: Investigator initiated trials ▪ Survey ▪ Management ▪ China

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Introduction

The number of clinical trials in China has increased rapidly in recent years. According to the data available on the two clinical trial registries in the U.S. (www.clinicaltrials.gov) and China (www.chictr.org.cn), not only the number of clinical trials for new drugs, new medical devices and *in vitro* diagnostic assays has increased, but also a considerable amount of non-profit, post-marketing research are conducted by non-pharmaceutical organizations, including academic and government institutions. These trials, known as Investigator Initiated Trials (IITs), are usually sponsored by investigators or academic groups in China, similar to the rest of world.

Unlike IITs in USA or EU, where investigators are more experienced and compliant with ICH in a well-regulated environment, IITs were not well regulated by the agency in China previously. Dr. Yang Zhi-Min, the clinical reviewer head of CDE clinical oncology department has published

the standing points of IIT management in China, firstly declaring that the basic principles of IITs regulation in China is similar to United States [1]. On October 16, 2014, the National Health and Family Planning Commission of the People 's Republic of China (NHFPC), China Food, have published Management Practices for Clinical Research Projects Carried Out by Medical and Health Institutions and Drug Administration (CFDA) and the State Administration of Traditional Chinese Medicine as a joined guidance document [2]. This document outlines the management requirement of clinical research at clinical facilities. It is a major progress to the management of IITs in China. Besides that, NHFPC released a guidance named as Regulations for the Ethical Review of Biomedical Research in Human, which was effective on October 12, 2016 [3]. This is also another important milestone to IITs in China, providing a regulatory guideline for the ethical review to all human biomedical research, including IITs.

Unlike the pharmaceutical companies, organizations or clinicians would face more challenges worldwide on IIT planning, conduction, funding resources, project oversight, ethical review and research staff management. Given the rapid development of IITs in China and the growing awareness of the importance of IITs in academic and medical institutions, understanding the overall picture of IITs management in local hospitals becomes urgently required. However, so far there is no published data to illustrate the overall IIT development status, especially the management aspects in China. Here we reported an internet-based survey to understand the overall management situation of IITs in local hospitals.

Methods

Questionnaire is developed via an online questionnaire tool (www.wenjuan.com). It can be accessed using desktop or mobile devices to answer the questionnaires and then submitted online. This internet based questionnaire was forwarded to 5 online clinical study discussion forums or professional groups on We Chat. Nearly 1500 members have been invited. Because the targeted responders of the survey are full-time staff working in the medical institution, an alert is popped out to request the participation of qualified respondents only.

The questionnaire covered major aspects of IITs management. It includes one cloze question, 21 single choice questions, and one multiple choice. Following sections are available:

Section 1: The hospital characteristics where responders work (Q1 - Q6). In order to collect the information precisely from clinical institutions only, Question 1 requested the provision of the hospital name where they work and we did not report the hospitals surveyed for privacy reason in this paper. Responders working for the pharmaceutical enterprises or non-clinical institutions will be excluded from the analysis. The type of the hospital (public or private), hospital beds and CFDA certification status (Only CFDA accredited sites are allow to run IND studies) were collected in this part of questions.

Section 2: Active IIT projects and management infrastructure (Q7 - Q9). This part of questions was aimed to learn the number of active IIT projects, the availability of a dedicated IIT project governance body, management process as well as the implementation of standard operating procedure (SOP).

Section 3: The management of IIT projects (Q10 - Q16). This part was aimed to learn the process management in following aspects: IIT registration and technical assessment, ethical review and approval criteria, quality control on IIT project, IIT data collection process and database management, clinical trial insurance coverage status for any interventional IIT project, and registration on public platform for any IIT project.

Section 4: Support for IIT projects (Q17 - Q23). These questions are designed to understand the current funding and resourcing issues in IIT projects, including: whether the fund covers the salary of research staff; whether a dedicated full-time clinical research coordinators (CRC) or nurse is assigned to the project; the relevance of IIT projects and the development of related academic area; expression of interest to clinical staff towards in IITs; and the current limitation of IIT project development in China.

Statistical analysis

In this survey, the data of each selection under each question is presented in number and percentile. We assessed the relationship in several key indicators. Chi-Square test is employed and $p<0.05$ is considered as statistically significant difference at a two-sided level.

Results

Survey was conducted from December 8 to 20 2016. A total qualified 259 respondents from 231 hospitals have provided feedback. Most feedback was management staff of clinical trials in clinical sectors. A

small number of respondents are clinical investigators. The geographic distribution of respondents is shown in Figure 1. It has shown that our respondents are mainly from eastern China where the most activity has on clinical trial conduction. The completion time of survey was 6 minutes and 22 seconds on average. The survey results were summarized in Table 1.

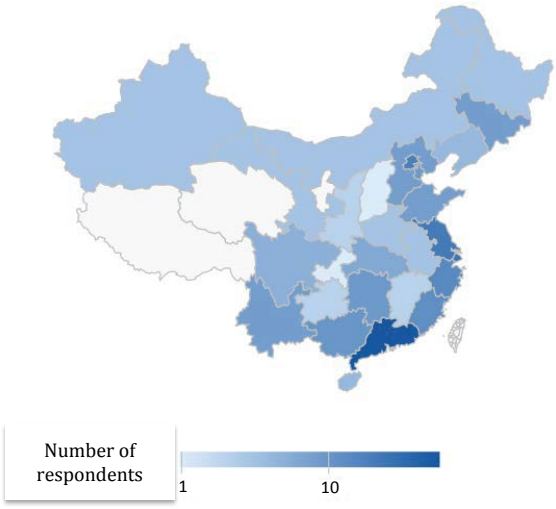

Figure 1: Geographic distribution of respondents

Table 1. Summary of Feedback to Questionnaires

	No of Respondents	Percentage
Section1 Characteristics of Surveyed Hospitals		
Q2: The type of hospital you are working for		
University Hospital	140	54.05%
Provincial / municipal hospital	103	39.77%
Military Hospital	12	4.63%
Private Hospital	4	1.54%
Q3: The grade of hospital you are working for		
Grade A Class III	243	93.82%
Grade B Class III	9	3.47%
Grade C Class III	1	0.39%
Grade A Class II	6	2.32%
Grade B Class II	0	0.00%
Q4: Is the hospital a general hospital or specialty hospital		
General Hospital	186	71.81%
Specialty Hospital	72	27.80%
Others	1	0.39%
Q5: Bed availability		
>2000 Beds	103	39.77%
1000-2000 Beds	111	42.86%
500-1000 Beds	29	11.20%
<500 Beds	16	6.18%
Q6: Is your hospital qualified by CFDA to conduct clinical trial of new drugs?		
Yes, Active projects >100	49	18.92%
Yes, Active projects between 50 to 100	57	22.01%
Yes, Active projects <50	135	52.12%
No CFDA accreditation	18	6.95%
Section 2: IIT summary and management infrastructure		
Q7: Is your hospital conducting IIT?		
Yes, Active projects >100	31	11.97%
Yes, Active projects between 50-100	20	7.72%
Yes, Active projects <50	188	72.59%
No IIT project running	20	7.72%
Q8: Does your hospital establish a dedicated team to manage or supervise IIT?		
Yes, managed by an independent department	14	5.41%
Yes, under the management of new drug clinical trial office.	114	44.02%
Yes, under the management by the Scientific Department	89	34.36%
Yes, managed by another department	8	3.09%
No	34	13.13%
Q9: Is the specific SOP/Guidance established to oversight IIT in your hospital?		
Yes, specific SOP/ Guidance set up	58	22.39%
No, follow the same SOP/ Guidance with new drug clinical trial	136	52.51%
No	65	25.10%
Section 3: Oversight and Management of IIT		
Q10: Is ITT reviewed prior to conduction in your hospital?		
Yes, reviewed by the management office	107	41.31%
Yes, research committee reviews that with the presence of epidemiologists and / or statisticians in the review process	37	14.29%
Yes, research board will review, research committee reviews that without the presence of epidemiologists and / or statisticians in the review process	51	19.69%
Q11: Is ITT approved by ethical committee in your hospital?		
Yes, must be approved by EC	230	88.80%
No, not required	2	0.77%
Depends	27	10.42%
Q12: Is the review criteria to IIT the same as new drug clinical trial?		
Same	126	48.65%
Different, stricter to IIT and hard to approve	20	7.72%
Different, more flexible to IIT and easy to be approved	113	43.63%
Q13: Is Quality Control conducted in IIT in your hospital		
Yes, 3-4 times annually	44	16.99%
Yes, annual QC	40	15.44%
Yes, QC when study closure	43	16.60%
Randomly checking	61	23.55%

No	71	27.41%
Q14: Is centralized data management applicable to IIT in your hospital? For example, EDC.		
Yes, whole data pack will be maintained from subject registration, randomization.	36	13.90%
Yes, a unified EDC system required for data entry, but no randomization system	5	1.93%
Yes, only archive the final database	18	6.95%
No, study team managed the data base alone	162	62.55%
Not applicable	38	14.67%
Q15: Does your hospital will procure a group medical insurance for all of IIT?		
Yes, the medical insurance covers all projects.	8	3.09%
Yes, the medical insurance is provided under IIT funds and covers all of IITs	3	1.16%
Yes, the medical insurance is provided under IIT funds and PI will charge the insurance fee from the funds.	10	3.86%
No, PI will procure the medical insurance by themselves.	238	91.89%
Q16: Is IIT registered on the related registration platform from NIH/WHO ?		
Not clear	125	48.26%
Upon the decision form PI	96	37.07%
The management office will provide registration pathway and PI will register the projects	36	13.90%
The management office will register for all of IITs	2	0.77%
Section 4: IIT support		
Q17: Is IIT funded by the special grants in your hospital?		
Yes, >100 thousand RMB per project annually	29	11.20%
Yes, 50-100 thousand RMB per project annually	19	7.34%
Yes, <50 thousand per project annually	12	4.63%
Planning	39	15.06%
No	160	61.78%
Q18: Is there clinical research coordinator (CRC) or study nurse (SN) to participate IIT?		
No	75	28.96%
The IIT project team will directly recruit CRC or SN under the project fund.	94	36.29%
The IIT project team will recruit CRC or SN under the 3rd party as contract workers.	29	11.20%
Both types are available.	61	23.55%
Q19: Is any funding guidance available regarding to the salary of project personnel team under the project budget, for example CRC??		
The salary proportion is no more than 20% to total budget.	43	16.60%
The salary proportion is no more than 30% to total budget.	15	5.79%
The salary proportion is no more than 50% to total budget.	9	3.47%
No limitation	192	74.13%
Q20: Will the principle investigator or staff in IITs be awarded if their trial result is published on peer review journal or referenced by treatment guideline?		
Yes, advantage on promotion and bonus	53	20.46%
Yes, bonus	79	30.50%
Yes, honorary certificates	0	0.00%
Planning	28	10.81%
No	99	38.22%
Q21: Do you think it makes sense to conduct IITs for the development in your department?		
Yes, very necessary	144	55.60%
Yes, some degree	100	38.61%
Basically No	5	1.93%
No known	10	3.86%
Q22: Do you think your colleagues are interested to conduct IITs in your hospitals?		
Yes, very proactive	54	20.85%
Yes, but lack of capacity	169	65.25%
Not care	32	12.36%
No	4	1.54%
Q23: What is the limitation do you think to conduct IITs in China (multiple choices)?		
Insufficient financial support	196	75.68%
Lack of scientific knowledge to design clinical trial	197	76.06%
Lack of administrative support	155	59.85%
Overwhelming project management issues	176	67.95%
Uncertainty on regulations and governance	165	63.71%
Others:	11	4.25%

Half of respondents were from university hospitals (54.05%) followed by that from provincial or municipal hospitals (39.77%). As most university hospitals and provincial hospitals are Grade A Class III hospitals and own over 1000 beds of capacity on average, this in turn reflecting in the following questions, majority of hospitals surveyed are Grade A Class III hospitals (93.82%) and owns over 1000 beds (82.63%). Our respondents were invited from the specialty groups with major interest on clinical trials. Nearly all of surveyed hospitals were accredited by CFDA to conduct clinical trials for new drugs (93.05%).

Most respondents have replied to run IITs as well (Q7, 93.28%). IITs were mainly supervised by the same

department to supervise new drug trial (Q8, 44.02%) or scientific department (34.36%). Just a smaller amount of hospitals has no administrative governance to IITs at all (13.13%). In the aspect of SOP system related, a quarter of respondents replied that no SOP or guidance to instruct IIT management at their hospitals (Q9, 25, 10%). Nevertheless, most hospitals have established a major infrastructure to oversight IITs but still having room to improve.

As summarized at Section 3, prior to initiation, most IITs have been technically reviewed by administrative body or research committee. Independent ethical review was mandatory in majority of hospitals (Q11). Only a small number of ECs will review the project subject to the real case. Most IITs were either reviewed by EC with the same review criteria as new drug trial (Q12 48.65%) or more flexible criteria (43.64%). Only 27.41% of IITs did not receive any QC (Q13). Majority of IITs have QC conducted. It has shown that at current stage, hospitals are raising awareness to improve the quality of IITs. In terms of data management, most investigators have used an independent database to capture the clinical trial data (Q14, 62.55%); 13.90% of respondents replied that their hospitals have all IITs under a centralized data management system. Medical insurance coverage is requested by ICH. In this survey, over 90% of medical insurance in IITs are provided by investigators themselves. The funding source for medical insurance was not disclosed in this survey. A worthy noting issue is that nearly half of IITs have not been registered on the registration platform (Q16, 48.26%), only a small proportion of respondents confirmed that their administrative office will help them registering the trials (13.90%).

Our survey also assessed the funding status of IITs in China. Not surprisingly only 23%of respondents replied that various amount of fund have been provided to run their IIT projects (Q17). Majority of feedback (61%) confirmed there is no financial support at all. Nevertheless, CRC or SN is funded in most of IITs (Q18, 71%). This showed that the investigators in China realized the significant impact of CRC/SN on the study delivery. Respondents acknowledged that IITs will bring them honor upon the trial outcome (Q20, 50.96%) and IITs can significantly improve the academic performance (Q21, 77%). However, when considering the interest of their colleagues on IIT conduction, 65% of respondents complained the lack of capacity constrained their interests on ITT (Q22). At last question Q23, most of respondents shared the same view on the limitations to further develop IIT in China as following: Insufficient financial funding (75.68%), lack of scientific knowledge (76.06%), administrative support (59.85%), and project management issues (67.95%) followed by the uncertainty of regulations and governance (63.71%).

Based on the survey results, we further evaluated the correlation within each hospital characteristic (Table 2 and Table 3). Most sites have active IITs less than 50 (ranged between 67.4-100%). Notably, a significant proportion of university hospitals had over 100 active IITs when the survey was undergoing (18.57%, $p<0.05$). A similar trend has also been seen when analyzing the correlation between hospital size (bed availability) and project numbers (Table 3, $p<0.05$). 62.5-75.86% of hospitals, regardless the hospital size, have IITs less than 50. To those hospital sizes over 1000 beds, 12.61-16.5% of them had more than 100 active IITs.

The correlation between other 2 important hospital characteristics and investigator interests were also explored separately in Table 4 and Table 5. As shown in Table 4, 26.43% of university hospital staff

Table 2. Correlation between hospital types and total number of active trials

Q2 \ Q7	Yes, Active projects >100	Yes, Active projects between 50-100	Yes, Active projects <50	No CFDA Accreditation	Number of respondents
University Hospital	18.57% (26)	10.0% (14)	67.14% (94)	4.29% (6)	140
Provincial / municipal hospital	3.88% (4)	5.83% (6)	77.67% (80)	12.62% (13)	103
Military Hospital	8.33% (1)	0.0% (0)	83.33% (10)	8.33% (1)	12
Private Hospital	0.0% (0)	0.0% (0)	100.0% (4)	0.0% (0)	4
Number of respondents	31	20	188	20	259

Chi-square Test: $p=0.012<0.05$

Table 3. Correlation between Hospital Capability and total number of active trials

Q5 \ Q7	Yes, Active projects >100	Yes, Active projects between 50-100	Yes, Active projects <50	No CFDA Accreditation	Number of respondents
>2000	16.5% (17)	9.71% (10)	70.87% (73)	2.91% (3)	103
2000-1000	12.61% (14)	6.31% (7)	74.77% (83)	6.31% (7)	111
1000-500	0.0% (0)	6.9% (2)	75.86% (22)	17.24% (5)	29
<500	0.0% (0)	6.25% (10)	62.5% (10)	31.25% (5)	16
Number of respondents	31	20	188	20	259

Chi-square Test: p=0.02<0.05

Table 4 Correlation between Hospital Types and Interest of clinical staff on IIT

Q2 \ Q22	Yes, very proactive	Yes, but lack of capacity	Not care	No	Number of respondents
University hospital	26.43% (37)	60.0% (84)	12.86% (18)	0.71% (1)	140
Provincial/ municipal public hospital	15.53% (16)	68.93% (71)	12.62% (13)	2.91% (3)	103
Military hospital	8.33% (1)	83.33% (10)	8.33% (1)	0.0% (0)	12
Private hospital	0.0% (0)	100.0% (4)	0.0% (0)	0.0% (0)	4
Number of respondents	54	169	32	4	259

Chi-square Test: p=0.02<0.05

Table 5 Correlation between hospital types and Interest of clinical staff on IIT

Q4 \ Q22	Yes, very proactive	Yes, but lack of capacity	Not care	No	Number of respondents
General Hospital	19.35% (36)	64.52% (120)	14.52% (27)	1.61% (3)	186
Specialist Hospital	25.0% (18)	66.67% (48)	6.94% (5)	1.39% (1)	72
Other	0.0% (0)	100.0% (1)	0.0% (0)	0.0% (0)	1
Number of respondents	54	169	32	4	259

Chi-square Test: p=0.02<0.05

responded in the survey showed very proactive attitude to IITs, significantly higher than those in provincial/ municipal hospitals or military hospitals (p<0.05). In contrast, majority of staff based in provincial/municipal hospitals and military hospitals felt the lack of capacity constraining their interest (68.93% and 83.33% respectively), as only 60% in the university hospitals. From another aspect, clinical staff in specialty hospitals expressed relatively higher interest to IITs (25%, Table 4) than the colleagues in general hospitals (19.35%). But still most of clinical staff, either in general hospitals or in the specialty hospitals, feels lack of capacity (64.32% *vs.* 66.67% respectively, Table 5).

Funding is critical to a successful delivery of IITs. We evaluated the funding impact on investigator interests, as shown on Table 6. Definitely, the sufficiency of financial funding status affected the willingness of IIT conduction in a great degree. 65.52% of respondents with funding over 100 thousand RMB are very proactive to conduct IITs. In contrast, 70% of respondents without IIT funding support are lacked capacity as well as those under planning 69.23%.

Table 6 Correlation between funding and Interest of clinical staff on IIT

Q17 \ Q22	Yes, very proactive	Yes, but lack of capacity	Not care	No	Number of respondents
Yes, >100 thousand RMB per project annually	65.52% (19)	34.48% (10)	0.0% (0)	0.0% (0)	29
Yes, 50-100 thousand RMB per project annually	31.58% (6)	57.89% (11)	10.53% (2)	0.0% (0)	19
Yes, <50 thousand per project annually	16.67% (2)	75.0% (9)	8.33% (1)	0.0% (0)	12
Being planned	20.51% (8)	69.23% (27)	7.69% (3)	2.56% (1)	39
No	11.88% (19)	70.0% (112)	16.25% (26)	1.88% (3)	160
Number of respondents	54	169	32	4	259

Chi-square Test: p=0.002<0.05

Table 7 Correlation between hospital types and awarding status

Q2 \ Q20	Yes, advantage on promotion and bonus	Yes, bonus	Yes, honorary certificates	Planning	No	Number of respondents
University hospital	23.57% (33)	32.86% (46)	0.0% (0)	10.71% (15)	32.86% (46)	140
Provincial / municipal public hospital	16.5% (17)	31.07% (32)	0.0% (0)	9.71% (10)	42.72% (44)	103
Military hospital	16.67% (2)	0.0% (0)	0.0% (0)	25.0% (3)	58.33% (7)	12
Private hospital	25.0% (1)	25.0% (1)	0.0% (0)	0.0% (0)	50.0% (2)	4
Number of respondents	53	79	0	28	99	259

Chi-square Test: p<0.000

Table 8 Correlation between management infrastructure and IITs QC frequency

	Yes. 3 - 4 times per year.	Yes. Once a year.	Yes. Project completion quality check.	Only random checks.	No.	Number of respondents
Yes, it is a dedicated management department	35.71% (5)	14.29% (2)	7.14% (1)	21.43% (3)	21.43% (3)	14
Yes, it is managed by a department that also manage new drugs clinical trials	28.07% (32)	17.54% (20)	22.81% (26)	21.05% (24)	10.53% (12)	114
Yes, it is managed by the Administration of Scientific Research	2.25% (2)	13.48% (12)	15.73% (14)	25.84% (23)	42.7% (38)	89
Yes, it is part of other administration department	0.0% (0)	37.5% (3)	12.5% (1)	25.0% (2)	25.0% (2)	8
No	14.71% (5)	8.82% (3)	2.94% (1)	26.47% (9)	47.06% (16)	34
Number of respondents	44	40	43	61	71	259

Chi-square Test: p<0.000

On Table 7, the correlation between hospital types and IIT interest motivation was analyzed. As the mainstream of clinical research sectors, 56.43% of university hospitals have provided either promotion advantage or bonus to attract staff conducting IITs. While provincial/municipal hospitals (47.57%) and military hospitals (58.33%) have no planning to promote IIT activities.

Finally, we revealed the correlation between the management infrastructure and QC performance in Table 8. If IITs are under a dedicated management department, various frequency of QC was conducted.

35.71% of IITs will be monitored by QC activities 3-4 times annually if a dedicated team takes an administrative responsibility. If there is no IITs governance structure in the hospital, 47.6% of hospitals did not run QC towards IITs.

Discussion

From 2004 to 2013, number of IIT in clinical oncology area has been increased from 10 in 2004 to nearly 200 in 2013 [4]. The booming of clinical trial in China and local innovative drug pharma has pushed CFDA reformation finally since July 2015. A white-paper like article has been published to illustrate the coming regulation policy reformation route and Oncological IIT development [5]. It is anticipating that in coming decades, more and more IITs will be conducted in China, even when the drug or clinical intervention is not approved yet. In order to provide more supportive solution to facilitate IIT development, it is necessary to understand current status of IIT management and governance infrastructure, from the aspect of hospital administration team.

As far as known, this survey is a first study collecting the management information of IITs in China comprehensively. The data reporting here is representable because the majority of respondents are from the most active academic sectors or public healthy sectors which run clinical trials in China and involved into IITs conduction or oversight. 259 respondents from 231 hospitals provided the first-handed IITs management / government infrastructure at their hospitals and their opinions towards IITs. The reason why data has been analyzed based on the responder rather than hospitals were because some individual opinions should be evaluated and the small number of respondents from same institution won't impact the major outcome.

Overall, the IITs are still conducted by university hospitals in a large proportion as well as more supportive solution have been consolidated in the university hospitals. This is not surprising because university hospitals traditionally take a significant role to conduct clinical trials globally. China is not an exception. The unique phenomenon is that most hospitals are also credited by CFDA to conduct registration trials of new drugs. Most clinicians have accumulated experience during sponsor-initiated trials. This in turn is helpful for them to start up the IITs based on the experience for protocol development, patient informed consent, database management etc.

A well-established management infrastructure will provide more oversight to IIT conduction. In this investigation, 78.38% of respondents have governance department in the hospital (Q7). SOP and/or Guidance were established to provide a frame on the IITs conduction as well as reviewed body in most hospitals. These will some degree ensure that IITs are in compliance with ICH. In addition, IIT QC has been conducted more frequently when the hospitals have a dedicated team to oversight their performance and quality (Table 8). This survey demonstrated the effort of Chinese clinical colleagues to ensure IITs in compliance with ICH from the governance level. We used to search PubMed or other academic searching engines and did not find the governance information of IITs overseas. It will be further worthwhile to investigate whether there is the difference on IITs governance between China and other mature societies.

According to the 2016 annual report of Dana-Farber Cancer Institute (DFCI) [6] and MD Anderson Cancer Center (MDACC) [7] in United States, DFCI has 354 million US$ fund on clinical research and this number is 780.5 million US$ in MDACC. Only 5.6 million US$ was reported by Sun Yat-Sen University Cancer Center to support clinical research. A huge gap on funding between academic centers from 2 countries is also epitome of clinical trial funding status of 2 countries. In China, IIT conduction is lacked off sufficient financial support but it is crucial to study activities. The funding incapacity has significant constrained the willingness to IITs, as reported in this survey. It is not realistic to fully rely on the government funding which is very competitive and the public grant is limited on clinical research. The professional bodies can establish the collaborative mechanism with pharma industry and social funds to support local IITs. In China, CTONG (Chinese Thoracic Oncology Group) has been published the primary outcome of 2 Phase III trials: OPTIMAL [8] and INFORM [9] on Lancet Oncology, which were supported by pharmaceutical companies and government funds. CTONG is a good case for academia to have collaborative trials conducted to answer the clinical dilemmas or the benefits/risks assessment of spontaneous drug use in an unapproved indication, which are not driven by pharmaceutical companies in most circumstances.

Our finding suggested that investigators should be encouraged to complete the clinical research training to improve their capability to design protocols and excursion capability even though they have chances to participate in the trials initiated by sponsors. Indeed,

this sort of training can be also provided by online platform, which will be more cost saving and efficient solution to balance their heavy workload and training needs.

Limitation of this survey is that we cannot have a balanced distribution of responders across different types of clinical institutions, especially private hospitals, which will increase their presence in coming decade. Nevertheless, the imbalanced distribution of clinical trial activities is presented in the real world and hard to avoid. The other issue is that in the questionnaire, we did not collect information furthermore to check what kind of system to manage clinical trial metrics or trial document, as well as the type of clinical trial data capture system (paper, spreadsheet or commercial EDC) and statistical analysis plan endorsement, which are critical to management. It is hoping to address these questions in coming surveys.

Conclusion

This survey firstly revealed the real status of IITs in China crossing different types of hospitals and addressed the supportive directions to IIT development in China.

Executive summary

Objective: With the rapid increasing clinical trials in China in recent years, there has been rising concern on the management of investigator initiated trials. Compared with the trials sponsored by pharmaceutical companies, IIT is facing practical challenges in China due to the lack of experience by investigator and immature regulatory circumstances. We conducted an internet-based survey to understand the overall picture of IITs management in China.

Methods: An internet-based questionnaire was developed and the staff of clinical trial offices from different types of hospitals was invited to provide response via mobile based App or online website in 2 weeks. We have collected the responses from the following aspects: administrative and governance infrastructure, ethical review, project management, funding resources and research staff management.

Results: From December 8 to 20, 2016, a total of 259 responses were collected from the staffs that are mainly responsible for the clinical trial management and scientific research based in the different clinical facilities.

Conclusion: In China, three key factors are important to improve the management on IITs: funding support, staffing resourcing and regulatory guidance.

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